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FILE 'CAPLUS, BIOSIS, MEDLINE, EMBASE' ENTERED AT 12:31:42 ON 13 AUG 2006
L1            69 S REVERSIB#####(10A)(BIND### OR BOUND OR ATTACH###### OR COUPL#
L2             6 S L1 AND (PHOSPHATE OR SULFATE OR CARBOXYL OR POLYVINYLSULFATE
L3             1 S L2 AND THERMUS
```

Freeform Search

Database: US Pre-Grant Publication Full-Text Database; US Patents Full-Text Database; US OCR Full-Text Database; EPO Abstracts Database; JPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Term: L9 and (phosphate or sulfate or carboxyl or polyvinylsulfate or polystyrosulfate or polyanetholsulfonate or sulfated or glucosamine

Display: 10 **Documents in Display Format:** - **Starting with Number** 1

Generate: ○ Hit List ◉ Hit Count ○ Side by Side ○ Image

Search Clear Interrupt

Search History

DATE: Sunday, August 13, 2006 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ		
L10	L9 and (phosphate or sulfate or carboxyl or polyvinylsulfate or polystyrosulfate or polyanetholsulfonate or sulfated or glucosamine or galacturonic acid or hyalouronic acid or fucose or xylose or dextran or heparin or fucoidan)	17	L10
L9	(polymerase$1 or transcriptase$1) near5 reversib$2 near5 (bind$3 or bound or attach$3 or coupl$3)	20	L9
L8	L7 and thermus	0	L8
L7	L6 and polymerase$1	12	L7
L6	L5 and (kit$1 or composition$1)	57	L6
L5	reversib$2 near5 (bind$3 or bound or attach$3 or coupl$3) near5 (phosphate or sulfate or corboxyl or polyvinylsulfate or polystyrolsulfate or polyanetholsulfonate or sulfated or glucosamine or galacturonic acid or hyalouronic acid or fucose or xylose or dextran or heparin or fucoidan or chondroitin or polysulfonate or xylan or pentosan)	68	L5
L4	l3 and kit$1	7	L4
L3	L2 and thermus aquaticus	9	L3
L2	L1 and (reversi$2 near5 (bind$3 or bound or attach$3 or coupl$3))	108	L2

L1	polymerase$1 and (phostate or sulfate or carboxyl or polyvinylsulfate or polystyrolsulfate or sulfated or glucose or glucosamine or galacturonic acid or hyalouronic acidor galactosamine or fucose or shlose or polysaccharide or dextran or heparan or heparin or fusoidan or chondroitin)	70558	L1

END OF SEARCH HISTORY

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s reversib#####(10a)(bind### or bound or attach###### or coupl###)(10a)(polymerase#
or ligase# or transcriptase#)
L1          69 REVERSIB#####(10A)(BIND### OR BOUND OR ATTACH###### OR COUPL###)
               (10A)(POLYMERASE# OR LIGASE# OR TRANSCRIPTASE#)

=> s l1 and (phosphate or sulfate or carboxyl or polyvinylsulfate or
polystyrosulfate or polyanetholsulfonate or sulfated or glucosamine or galacturonic
acid or hyalouronic acid or fucose or xylose or dextran or heparin or fucoidan)
L2           6 L1 AND (PHOSPHATE OR SULFATE OR CARBOXYL OR POLYVINYLSULFATE OR
               POLYSTYROSULFATE OR POLYANETHOLSULFONATE OR SULFATED OR GLUCOSAM
              INE OR GALACTURONIC ACID OR HYALOURONIC ACID OR FUCOSE OR XYLOSE
              OR DEXTRAN OR HEPARIN OR FUCOIDAN)

=> s l2 and thermus
L3           1 L2 AND THERMUS

=> d l3

L3   ANSWER 1 OF 1  BIOSIS  COPYRIGHT (c) 2006 The Thomson Corporation  on STN
AN   1976:226999  BIOSIS
DN   PREV197662056999; BA62:56999
TI   STUDIES ON A THERMOPHILIC RNA POLYMERASE EC-2.7.7.6 WHICH IS ACTIVE ONLY
     ON POLY DEOXY ADENYLATE THYMIDYLATE CO POLYMER AND POLY DEOXY ADENYLATE
     DEOXY THYMIDYLATE HOMO POLYMER.
AU   DATE T; SUZUKI K; IMAHORI K
SO   Journal of Biochemistry (Tokyo), (1975) Vol. 78, No. 5, pp. 955-967.
     CODEN: JOBIAO. ISSN: 0021-924X.
DT   Article
FS   BA
LA   Unavailable


=> d l3 bib ab kwic

L3   ANSWER 1 OF 1  BIOSIS  COPYRIGHT (c) 2006 The Thomson Corporation  on STN
AN   1976:226999  BIOSIS
DN   PREV197662056999; BA62:56999
TI   STUDIES ON A THERMOPHILIC RNA POLYMERASE EC-2.7.7.6 WHICH IS ACTIVE ONLY
     ON POLY DEOXY ADENYLATE THYMIDYLATE CO POLYMER AND POLY DEOXY ADENYLATE
     DEOXY THYMIDYLATE HOMO POLYMER.
AU   DATE T; SUZUKI K; IMAHORI K
SO   Journal of Biochemistry (Tokyo), (1975) Vol. 78, No. 5, pp. 955-967.
     CODEN: JOBIAO. ISSN: 0021-924X.
DT   Article
FS   BA
LA   Unavailable
AB   Two types of RNA polymerases [EC 2.7.7.6], polymerases A and B, exist in
     thermophilic bacteria, Thermus thermophilus HB8.  Polymerase B
     is apparently similar to the core enzyme of polymerase A but is active
     only when an alternating copolymer of deoxyadenylic and deoxythymidylic
     acids (poly d(A-T)) or a mixture of homopolymers of deoxyadenylic acid and
     deoxythymidylic acid (poly dAdT) is used as a template.  The relation of
     polymerase B to polymerase A and the former's inactivity for natural DNA
     were studied.  Polymerase B did not show PPi exchange activity.
     Dinucleoside monophosphates did not activate the RNA-synthesizing
     activity.  Polymerase B thus had no initiation and presumably no
     elongation activities.  Polymerase B had about 6 + greater affinity
     to DNA than polymerase A.  The binding of polymerase B
     to DNA was reversible.  The complex of DNA with polymerase A was
     stable, and the polymerase was not removed from the initial complex, even
     when a large amount of DNA was added.  Escherichia coli σ subunit
     could not stimulate the activity of polymerase B toward DNAs.  Polymerase
     B could utilize poly d(A-T) and poly dAdT as templates, but could not use
     Bacillus cereus DNA, although its structure is similar to that of poly
```

d(A-T).
AB Two types of RNA polymerases [EC 2.7.7.6], polymerases A and B, exist in thermophilic bacteria, Thermus thermophilus HB8. Polymerase B is apparently similar to the core enzyme of polymerase A but is active only when an. . . initiation and presumably no elongation activities. Polymerase B had about 6 + greater affinity to DNA than polymerase A. The binding of polymerase B to DNA was reversible. The complex of DNA with polymerase A was stable, and the polymerase was not removed from the initial complex, even. . .
IT Miscellaneous Descriptors
THERMUS-THERMOPHILUS ESCHERICHIA-COLI SIGMA SUBUNIT
BACILLUS-CEREUS DNA PYRO PHOSPHATE EXCHANGE ACTIVITY
INITIATION ELONGATION
RN . . . 24939-09-1Q (POLY D(A-T))
25464-54-4Q (POLY D(A-T))
26966-61-0Q (POLY D(A-T))
24939-09-1Q (POLY DADT)
25464-54-4Q (POLY DADT)
26966-61-0Q (POLY DADT)
14000-31-8 (PYRO PHOSPHATE)

=> dl2 1-6 bib ab kwic
DL2 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> d l2 1-6 bib ab kwic

L2 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1979:163928 CAPLUS
DN 90:163928
TI Characterization of an endogenous transcription inhibitor from Physarum polycephalum
AU Hildebrandt, Armin; Mengel, Rudolf; Sauer, Helmut W.
CS Fachber. Biol., Univ. Konstanz, Konstanz, Fed. Rep. Ger.
SO Zeitschrift fuer Naturforschung, C: Journal of Biosciences (1979), 34C(1-2), 76-86
CODEN: ZNCBDA; ISSN: 0341-0382
DT Journal
LA English
AB A substance was purified from isolated nuclei of P. polycephalum by equilibrium and velocity gradient centrifugations, ion exchange chromatog., and gel filtration which has a high mol. weight, can be labeled in vivo with 32P, is heat stable and resistant to amylases, nucleases, and phosphodiesterase, but is sensitive to phosphatases or hydrolysis. This material consists of phosphate and glycerol. It selectively inhibits in vitro transcription by RNA polymerases, predominantly the homologous enzyme A, by binding to the enzyme. In the presence of this inhibitor of transcription, a stable RNA polymerase-template complex cannot be formed. Binding to and inactivation of RNA polymerase is reversible at high ionic strength.
AB A substance was purified from isolated nuclei of P. polycephalum by equilibrium and velocity gradient centrifugations, ion exchange chromatog., and gel filtration which has a high mol. weight, can be labeled in vivo with 32P, is heat stable and resistant to amylases, nucleases, and phosphodiesterase, but is sensitive to phosphatases or hydrolysis. This material consists of phosphate and glycerol. It selectively inhibits in vitro transcription by RNA polymerases, predominantly the homologous enzyme A, by binding to the enzyme. In the presence of this inhibitor of transcription, a stable RNA polymerase-template complex cannot be formed. Binding to and inactivation of RNA polymerase is reversible at high ionic strength.

L2 ANSWER 2 OF 6 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 1982:169150 BIOSIS
DN PREV198273029134; BA73:29134
TI REOVIRUS ENZYMES THAT MODIFY MESSENGER RNA ARE INHIBITED BY PERTURBATION OF THE LAMBDA PROTEINS.
AU MORGAN E M [Reprint author]; KINGSBURY D W
CS DIV VIROL, ST JUDE CHILDRENS RES HOSP, 332 N LAUDERDALE, PO BOX 318, MEMPHIS, TENN 38101, USA
SO Virology, (1981) Vol. 113, No. 2, pp. 565-572.
CODEN: VIRLAX. ISSN: 0042-6822.
DT Article
FS BA
LA ENGLISH
AB When pyridoxal phosphate (PLP) binds reversibly to a select population of reovirus λ protein molecules, the transcriptase activity in virus cores is inhibited. Each of the enzymes involved in post-transcriptional modifications of virus mRNA molecules (nucleotide phosphohydrolase, guanylyltransferase and both methyltransferases) is inhibited reversibly by PLP. Reovirus mRNA transcription and modification seem to be accomplished by a topographically related group of enzyme molecules and suggests these enzymatic activities reside in ≥ 1 of the λ protein species. PLP did not interact with the RNA binding sites of the methyltransferases or guanylyltransferase, with the GTP binding site of guanylyltransferase, or with the nucleotide binding site of the phosphohydrolase, as shown by the inability of these substrates to compete with PLP in kinetic assays or to block PLP-directed reductive alkylation of the λ proteins. Kinetic data suggested that PLP interacts with the AdoMet binding sites of the reovirus methyltransferases.
AB When pyridoxal phosphate (PLP) binds reversibly to a select population of reovirus λ protein molecules, the transcriptase activity in virus cores is inhibited. Each of the enzymes involved in post-transcriptional modifications of virus mRNA molecules (nucleotide phosphohydrolase,. . .
IT Miscellaneous Descriptors
VIRUS CORE TRANSCRIPTASE ACTIVITY POST TRANSCRIPTIONAL MODIFICATION NUCLEOTIDE PHOSPHO HYDROLASE METHYL TRANSFERASE GUANYLYL TRANSFERASE PYRIDOXAL PHOSPHATE GTP BINDING SITE
RN 9033-33-4Q (NUCLEOTIDE PHOSPHOHYDROLASE)
50936-50-0Q (NUCLEOTIDE PHOSPHOHYDROLASE)
9033-25-4 (METHYLTRANSFERASE)
54-47-7 (PYRIDOXAL PHOSPHATE)
9013-05-2 (PHOSPHO HYDROLASE)

L2 ANSWER 3 OF 6 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 1979:245141 BIOSIS
DN PREV197968047645; BA68:47645
TI CHARACTERIZATION OF AN ENDOGENOUS TRANSCRIPTION INHIBITOR FROM PHYSARUM-POLYCEPHALUM.
AU HILDEBRANDT A [Reprint author]; MENGEL R; SAUER H W
CS FACHBEREICH 3, UNIV BREMEN, POSTFACH 33 04 40, D-2800 BREMEN 33, W GER
SO Zeitschrift fuer Naturforschung Section C Journal of Biosciences, (1979) Vol. 34, No. 1-2, pp. 76-86.
ISSN: 0939-5075.
DT Article
FS BA
LA ENGLISH
AB A substance was purified from isolated nuclei of P. polycephalum by equilibrium and velocity gradient centrifugations, ion exchange chromatography and gel filtration, which has a high MW, can be labeled in vivo with 32P, is heat-stable and resistant to amylases, proteases, nucleases and phosphodiesterase but is sensitive to phosphatases or hydrolysis. This material consists of phospate and glycerol. It

selectively inhibits in vitro transcription of RNA polymerases, predominantly the homologous enzyme A by binding to the enzyme. In the presence of this inhibitor of transcription a stable RNA polymerase-template complex cannot be formed. Binding to and inactivation of RNA polymerase is reversible at high ionic strength.

AB. . . binding to the enzyme. In the presence of this inhibitor of transcription a stable RNA polymerase-template complex cannot be formed. Binding to and inactivation of RNA polymerase is reversible at high ionic strength.

IT Miscellaneous Descriptors
GLYCERO PHOSPHATE RNA POLYMERASES

RN 12040-65-2Q (GLYCERO PHOSPHATE)
27082-31-1Q (GLYCERO PHOSPHATE)

L2 ANSWER 4 OF 6 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 1976:226999 BIOSIS
DN PREV197662056999; BA62:56999
TI STUDIES ON A THERMOPHILIC RNA POLYMERASE EC-2.7.7.6 WHICH IS ACTIVE ONLY ON POLY DEOXY ADENYLATE THYMIDYLATE CO POLYMER AND POLY DEOXY ADENYLATE DEOXY THYMIDYLATE HOMO POLYMER.
AU DATE T; SUZUKI K; IMAHORI K
SO Journal of Biochemistry (Tokyo), (1975) Vol. 78, No. 5, pp. 955-967.
CODEN: JOBIAO. ISSN: 0021-924X.
DT Article
FS BA
LA Unavailable
AB Two types of RNA polymerases [EC 2.7.7.6], polymerases A and B, exist in thermophilic bacteria, Thermus thermophilus HB8. Polymerase B is apparently similar to the core enzyme of polymerase A but is active only when an alternating copolymer of deoxyadenylic and deoxythymidylic acids (poly d(A-T)) or a mixture of homopolymers of deoxyadenylic acid and deoxythymidylic acid (poly dAdT) is used as a template. The relation of polymerase B to polymerase A and the former's inactivity for natural DNA were studied. Polymerase B did not show PPi exchange activity. Dinucleoside monophosphates did not activate the RNA-synthesizing activity. Polymerase B thus had no initiation and presumably no elongation activities. Polymerase B had about 6 + greater affinity to DNA than polymerase A. The binding of polymerase B to DNA was reversible. The complex of DNA with polymerase A was stable, and the polymerase was not removed from the initial complex, even when a large amount of DNA was added. Escherichia coli σ subunit could not stimulate the activity of polymerase B toward DNAs. Polymerase B could utilize poly d(A-T) and poly dAdT as templates, but could not use Bacillus cereus DNA, although its structure is similar to that of poly d(A-T).

AB. . . initiation and presumably no elongation activities. Polymerase B had about 6 + greater affinity to DNA than polymerase A. The binding of polymerase B to DNA was reversible.
The complex of DNA with polymerase A was stable, and the polymerase was not removed from the initial complex, even. . .

IT Miscellaneous Descriptors
THERMUS-THERMOPHILUS ESCHERICHIA-COLI SIGMA SUBUNIT BACILLUS-CEREUS DNA PYRO PHOSPHATE EXCHANGE ACTIVITY INITIATION ELONGATION

RN . . . 24939-09-1Q (POLY D(A-T))
25464-54-4Q (POLY D(A-T))
26966-61-0Q (POLY D(A-T))
24939-09-1Q (POLY DADT)
25464-54-4Q (POLY DADT)
26966-61-0Q (POLY DADT)
14000-31-8 (PYRO PHOSPHATE)

L2 ANSWER 5 OF 6 MEDLINE on STN
AN 79183748 MEDLINE

DN PubMed ID: 155953
TI Characterization of an endogenous transcription inhibitor from Physarum polycephalum.
AU Hildebrandt A; Mengel R; Sauer H W
SO Zeitschrift fur Naturforschung. Section C: Biosciences, (1979 Jan-Feb) Vol. 34, No. 1-2, pp. 76-86.
Journal code: 7801143. ISSN: 0341-0382.
CY GERMANY, WEST: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 197907
ED Entered STN: 15 Mar 1990
Last Updated on STN: 6 Feb 1998
Entered Medline: 16 Jul 1979
AB A substance has been purified from isolated nuclei of Physarum polycephalum by equilibrium and velocity gradient centrifugations, ion exchange chromatography and gel filtration which has a high molecular weight, can be labeled in vivo with 32P, is heat stable and resistant to amylases, proteases, nucleases and phosphodiesterase but is sensitive to phosphatases or hydrolysis. This material consists of phosphate and glycerol. It selectively inhibits in vitro transcription of RNA polymerases, predominantly the homologous enzyme A by binding to the enzyme. In the presence of this inhibitor of transcription a stable RNA polymerase-template complex cannot be formed. Binding to and inactivation of RNA polymerase is reversible at high ionic strength.
AB . . . stable and resistant to amylases, proteases, nucleases and phosphodiesterase but is sensitive to phosphatases or hydrolysis. This material consists of phosphate and glycerol. It selectively inhibits in vitro transcription of RNA polymerases, predominantly the homologous enzyme A by binding to the enzyme. In the presence of this inhibitor of transcription a stable RNA polymerase-template complex cannot be formed. Binding to and inactivation of RNA polymerase is reversible at high ionic strength.

L2 ANSWER 6 OF 6 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN
AN 81216548 EMBASE
DN 1981216548
TI Reovirus enzymes that modify messenger RNA are inhibited by perturbation of the lambda proteins.
AU Morgan E.M.; Kingsbury D.W.
CS Div. Virol., St Jude Child. Res. Hosp., Memphis, TN 38101, United States
SO Virology, (1981) Vol. 113, No. 2, pp. 565-572. .
CODEN: VIRLAX
CY United States
DT Journal
FS 047 Virology
022 Human Genetics
LA English
ED Entered STN: 9 Dec 1991
Last Updated on STN: 9 Dec 1991
AB When pyridoxal phosphate (PLP) binds reversibly to a select population of reovirus γ protein molecules, the transcriptase activity in virus cores is inhibited. We now report that each of the enzymes involved in post-transcriptional modifications of virus mRNA molecules (nucleotide phosphohydrolase, guanylyltransferase, and both methyltransferases) is also inhibited reversibly by PLP. This supports the view that reovirus mRNA transcription and modification are accomplished by a topographically related group of enzyme molecules and suggests that these enzymatic activities reside in one or more of the γ protein species. PLP did not interact with the RNA binding sites of the methyltransferases or

guanylyltransferase, with the GTP binding site of guanylyltransferase, or with the nucleotide binding site of the phosphohydrolase, as shown by the inability of these substrates to compete with PLP in kinetic assays or to block PLP-directed reductive alkylation of the γ proteins. However, kinetic data suggested that PLP interacts with the AdoMet binding sites of the reovirus methyltransferases.

AB When pyridoxal phosphate (PLP) binds reversibly to a select population of reovirus γ protein molecules, the transcriptase activity in virus cores is inhibited. We now report that each of the enzymes involved in post-transcriptional modifications of virus. . .

=>

```
> s sulfat##(5a)(polynucleotide# or oligonucleotide# or polysaccharide# or glucose
or glucosamine or galactouronic)(10a)(polymerase chain rection or polynucleotide
synthesis)
L1            1 SULFAT##(5A)(POLYNUCLEOTIDE# OR OLIGONUCLEOTIDE# OR POLYSACCHARI
                DE# OR GLUCOSE OR GLUCOSAMINE OR GALACTOURONIC)(10A)(POLYMERASE
                CHAIN RECTION OR POLYNUCLEOTIDE SYNTHESIS)

=> d l1 1 bib ab

L1   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2003:376294  CAPLUS
DN   138:384225
TI   Polynucleotide synthesis method and compositions for reversible inhibition
     of thermostable polymerases
IN   Peters, Lars-Erik
PA   Eppendorf AG, Germany
SO   U.S. Pat. Appl. Publ., 24 pp.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     --------------      ----   --------    --------------------    --------
PI   US 2003092135        A1    20030515    US 2001-993064          20011113
     US 6667165           B2    20031223
     US 2004077008        A1    20040422    US 2003-661428          20030911
PRAI US 2001-993064       A1    20011113
AB   Methods for improving sensitivity and specificity of polynucleotide
     synthesis are disclosed.  The method includes reversibly blocking
     thermophilic polymerase activity with non-nucleic acid polyanions in a
     temperature dependent manner.  The methods control target specific primer
     extension throughout all stages of a DNA or RNA amplification reaction.
     Corresponding compns. and kits are disclosed.


=> sulfat##(5a)(polynucleotide# or oligonucleotide# or polysaccharide# or glucose
or glucosamine or galactouronic or hyalouronic acid or galactosamine or fucose)
SULFAT##(5A)(POLYNUCLEOTIDE# IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s sulfat##(5a)(polynucleotide# or oligonucleotide# or polysaccharide# or glucose
or glucosamine or galactouronic or hyalouronic acid or galactosami
UNMATCHED LEFT PARENTHESIS '5A)(POLYNUCLEO'
The number of right parentheses in a query must be equal to the
number of left parentheses.

=> s sulfat##(5a)(polynucleotide or oligonucleotide or polysaccharide# or glucose
or fucose or glucosamine or galactouronic)
L2        14162 SULFAT##(5A)(POLYNUCLEOTIDE OR OLIGONUCLEOTIDE OR POLYSACCHARIDE
                # OR GLUCOSE OR FUCOSE OR GLUCOSAMINE OR GALACTOURONIC)

=> s l2 and hyalouronic acid
L3            0 L2 AND HYALOURONIC ACID

=> s l2 and galactosamine
L4          420 L2 AND GALACTOSAMINE

=> s l4 and (polymerase chain reaction or RT-PCR or ligation or polynucleotide
synthe########)
L5            1 L4 AND (POLYMERASE CHAIN REACTION OR RT-PCR OR LIGATION OR
                POLYNUCLEOTIDE SYNTHE########)
```

=> d l5 bib ab kwic

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:376294 CAPLUS
DN 138:384225
TI Polynucleotide synthesis method and compositions for reversible inhibition of thermostable polymerases
IN Peters, Lars-Erik
PA Eppendorf AG, Germany
SO U.S. Pat. Appl. Publ., 24 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003092135	A1	20030515	US 2001-993064	20011113
	US 6667165	B2	20031223		
	US 2004077008	A1	20040422	US 2003-661428	20030911
PRAI	US 2001-993064	A1	20011113		

AB Methods for improving sensitivity and specificity of polynucleotide synthesis are disclosed. The method includes reversibly blocking thermophilic polymerase activity with non-nucleic acid polyanions in a temperature dependent manner. The methods control target specific primer extension throughout all stages of a DNA or RNA amplification reaction. Corresponding compns. and kits are disclosed.
TI Polynucleotide synthesis method and compositions for reversible inhibition of thermostable polymerases
AB Methods for improving sensitivity and specificity of polynucleotide synthesis are disclosed. The method includes reversibly blocking thermophilic polymerase activity with non-nucleic acid polyanions in a temperature dependent manner. The methods control target specific primer extension throughout all stages of a DNA or RNA amplification reaction. Corresponding compns. and kits are disclosed.
ST polynucleotide synthesis kit PCR thermophilic polymerase inhibitor polyanion
IT Primers (nucleic acid)
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(DNA; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)
IT Polymers, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(co-, sugar; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)
IT Molecular association
(dissociation, polyanion dissociation from polymerase; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)
IT Temperature
(polymerization, at which polyanion inhibits thermostable polymerase; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)
IT Archaea
Heating
Human immunodeficiency virus 1
Meiothermus ruber
PCR (polymerase chain reaction)
Polymerization
Pyrococcus
Pyrococcus furiosus
Pyrococcus woesei
Sulfolobus

Thermococcus litoralis
Thermophilic bacteria
Thermoplasma acidophilum
Thermotoga maritima
Thermus aquaticus
Thermus brockianus
Thermus flavus
Thermus thermophilus
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Deoxyribonucleoside triphosphates
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Enzyme inhibitors
Sulfonic acids, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Test kits
(polynucleotide synthesis; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Sulfates, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polysulfates, synthetic organic; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Anions
(polyvalent; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT DNA
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(primer; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Avian myeloblastosis virus
Human immunodeficiency virus 2
Murine leukemia virus
Rous sarcoma virus
(reverse transcriptase; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Polymers, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(sugar; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Oligosaccharides, biological studies
Polysaccharides, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(sulfated; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Polynucleotides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(synthesis; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Nucleic acids
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(template; polynucleotide synthesis method and

```
      compns. for reversible inhibition of thermostable polymerases)
IT   Eubacteria
      (thermophilic; polynucleotide synthesis method and
      compns. for reversible inhibition of thermostable polymerases)
IT   57-50-1, Sugar, biological studies
     RL: BSU (Biological study, unclassified); BUU (Biological use,
     unclassified); BIOL (Biological study); USES (Uses)
      (polymer or copolymer; polynucleotide synthesis
      method and compns. for reversible inhibition of thermostable
      polymerases)
IT   9012-90-2, DNA polymerase
     RL: BSU (Biological study, unclassified); BIOL (Biological study)
      (polynucleotide synthesis method and compns. for
      reversible inhibition of thermostable polymerases)
IT   50-99-7, Glucose, biological studies   685-73-4, D-Galacturonic acid
     1811-31-0, N-Acetyl Galactosamine   2438-80-4D, Fucose
     , sulfated   7512-17-6, N-Acetyl-glucosamine   9003-53-6D,
     Polystyrene, sulfate   9004-61-9, Hyaluronic acid   9005-49-6,
     Heparin, biological studies   9007-28-7, Chondroitin polysulfate
     9014-24-8, RNA polymerase   9042-14-2, Dextran sulfate
     9050-30-0, Heparan sulfate   9056-36-4, Keratan polysulfate
     9068-38-6, Reverse transcriptase   9072-19-9, Fucoidan   25191-25-7,
     Polyvinyl sulfate   37300-21-3, Pentosan polysulfate
     RL: BSU (Biological study, unclassified); BUU (Biological use,
     unclassified); BIOL (Biological study); USES (Uses)
      (polynucleotide synthesis method and compns. for
      reversible inhibition of thermostable polymerases)


=> s l4 and PCR
L6            1 L4 AND PCR

=> s l4 and (PCR or transcri####### or (DNA or RNA)(5a)(synthes#####))
L7            7 L4 AND (PCR OR TRANSCRI####### OR (DNA OR RNA)(5A)(SYNTHES#####
                ))

=> dup rem l7
PROCESSING COMPLETED FOR L7
L8            6 DUP REM L7 (1 DUPLICATE REMOVED)

=> d l8 1-6 bib ab kwic

L8   ANSWER 1 OF 6  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2003:376294  CAPLUS
DN   138:384225
TI   Polynucleotide synthesis method and compositions for reversible inhibition
     of thermostable polymerases
IN   Peters, Lars-Erik
PA   Eppendorf AG, Germany
SO   U.S. Pat. Appl. Publ., 24 pp.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------    --------
PI   US 2003092135        A1    20030515    US 2001-993064          20011113
     US 6667165           B2    20031223
     US 2004077008        A1    20040422    US 2003-661428          20030911
PRAI US 2001-993064       A1    20011113
AB   Methods for improving sensitivity and specificity of polynucleotide
     synthesis are disclosed.  The method includes reversibly blocking
     thermophilic polymerase activity with non-nucleic acid polyanions in a
     temperature dependent manner.  The methods control target specific primer
```

extension throughout all stages of a DNA or RNA amplification reaction. Corresponding compns. and kits are disclosed.

ST polynucleotide synthesis kit PCR thermophilic polymerase inhibitor polyanion

IT Primers (nucleic acid)
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(DNA; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Archaea
Heating
Human immunodeficiency virus 1
Meiothermus ruber
PCR (polymerase chain reaction)
Polymerization
Pyrococcus
Pyrococcus furiosus
Pyrococcus woesei
Sulfolobus
Thermococcus litoralis
Thermophilic bacteria
Thermoplasma acidophilum
Thermotoga maritima
Thermus aquaticus
Thermus brockianus
Thermus flavus
Thermus thermophilus
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Sulfates, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polysulfates, synthetic organic; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT DNA
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(primer; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Avian myeloblastosis virus
Human immunodeficiency virus 2
Murine leukemia virus
Rous sarcoma virus
(reverse transcriptase; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Oligosaccharides, biological studies
Polysaccharides, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(sulfated; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT 9012-90-2, DNA polymerase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT 50-99-7, Glucose, biological studies 685-73-4, D-Galacturonic acid 1811-31-0, N-Acetyl Galactosamine 2438-80-4D, Fucose, sulfated 7512-17-6, N-Acetyl-glucosamine 9003-53-6D, Polystyrene, sulfate 9004-61-9, Hyaluronic acid 9005-49-6, Heparin, biological studies 9007-28-7, Chondroitin polysulfate 9014-24-8, RNA polymerase 9042-14-2, Dextran sulfate 9050-30-0, Heparan sulfate 9056-36-4, Keratan polysulfate 9068-38-6, Reverse transcriptase 9072-19-9, Fucoidan

25191-25-7, Polyvinyl sulfate 37300-21-3, Pentosan polysulfate
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

L8 ANSWER 2 OF 6 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 1996:61390 BIOSIS
DN PREV199698633525
TI Sulfated polysaccharides inhibit lymphocyte-to-epithelial transmission of human immunodeficiency virus-1.
AU Pearce-Pratt, Rachael [Reprint author]; Phillips, David M.
CS Abbott Lab., Ross Products Div., 3300 Stelzer Road, Columbia, OH 43219, USA
SO Biology of Reproduction, (1996) Vol. 54, No. 1, pp. 173-182.
CODEN: BIREBV. ISSN: 0006-3363.
DT Article
LA English
ED Entered STN: 9 Feb 1996
Last Updated on STN: 10 Feb 1996
AB We have previously suggested that sulfated polysaccharides could be used in a vaginal formulation to inhibit infection by human immunodeficiency virus (HIV-1).This supposition was based on studies in which we developed and employed an in vitro model to simulate the mechanism of HIV-1 transmission during coitus. We found that adhesion of mononuclear cells to epithelia was the initial step in infection and speculated that blocking adhesion would prevent HIV-1 transmission. We observed that certain sulfated polysaccharides prevented adhesion of lymphoma cell lines to epithelial cell lines, which were derived from the genital tract, in concentrations of a few milligrams per milliliter; and we theorized that sulfated polysaccharides could thus be used as active ingredients in a topical "microbicide." In the present in vitro study, evidence is presented that a number of sulfated polysaccharides, including carrageenan, dextran sulfate, heparin, fucoidan, and pentosan polysulfate, are capable of blocking infection by mechanisms other than adhesion at concentrations of a thousand times lower than the dosages that are needed to block cell adhesion. One of these compounds, iota carrageenan, is capable not only of blocking infection of epithelia at concentrations of 1-2 mu-g, but of blocking adhesion to a far greater extent than the other sulfated polysaccharides tested. For this reason, as well as for considerations of safety, stability, and gelling properties, we suggest that iota carrageenan may be the best choice of the sulfated polysaccharides tested for use as a vaginal microbicide. The same in vitro model was employed to decipher the cell surface molecules involved in lymphocyte-to-epithelial adhesion. To accomplish this, we screened for the presence of cell adhesion molecules (CAMs), carbohydrates, proteoglycans, and carbohydrate-binding sites. HIV-1-infected lymphocytic cells expressed a CAM profile typical of activated, infected cells (e.g., HLA-DR+, CD4-, LFA-1+, ICAM-1+, LFA-3+, CD2+) whereas epithelia expressed few CAMs (LFA-3, ICAM-1, VLA-5, CD44, CD26, s-LEX). Both cell types expressed heparan sulfate and chondroitin sulfate proteoglycans. A variety of sugars (mannose, fucose, galactose, Nac-galactosamine, Nac-glucosamine) were also present, but these cells expressed few carbohydrate-binding sites; lymphocytes bound beta-galactose. We were unable to block the adhesion with anti-CAM antibodies or with exogenous sugars. When enzymes were used against sulfated cell surface molecules, chondroitinase was found to block the adhesion. Our evidence suggests that this CAM-independent adhesion may be a lectin-glycosaminoglycan interaction.
TI Sulfated polysaccharides inhibit lymphocyte-to-epithelial transmission of human immunodeficiency virus-1.
AB We have previously suggested that sulfated

polysaccharides could be used in a vaginal formulation to inhibit infection by human immunodeficiency virus (HIV-1).This supposition was based on studies. . . epithelia was the initial step in infection and speculated that blocking adhesion would prevent HIV-1 transmission. We observed that certain sulfated polysaccharides prevented adhesion of lymphoma cell lines to epithelial cell lines, which were derived from the genital tract, in concentrations of a few milligrams per milliliter; and we theorized that sulfated polysaccharides could thus be used as active ingredients in a topical "microbicide." In the present in vitro study, evidence is presented that a number of sulfated polysaccharides, including carrageenan, dextran sulfate, heparin, fucoidan, and pentosan polysulfate, are capable of blocking infection by mechanisms other than adhesion at concentrations of a thousand. . . infection of epithelia at concentrations of 1-2 mu-g, but of blocking adhesion to a far greater extent than the other sulfated polysaccharides tested. For this reason, as well as for considerations of safety, stability, and gelling properties, we suggest that iota carrageenan may be the best choice of the sulfated polysaccharides tested for use as a vaginal microbicide. The same in vitro model was employed to decipher the cell surface molecules. . . CD44, CD26, s-LEX). Both cell types expressed heparan sulfate and chondroitin sulfate proteoglycans. A variety of sugars (mannose, fucose, galactose, Nac-galactosamine , Nac-glucosamine) were also present, but these cells expressed few carbohydrate-binding sites; lymphocytes bound beta-galactose. We were unable to block the. . .

ORGN . . .
Name
human
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
ORGN Classifier
Retroviridae 03305
Super Taxa
DNA and RNA Reverse Transcribing Viruses; Viruses; Microorganisms
Organism Name
Retroviridae
Taxa Notes
DNA and RNA Reverse Transcribing Viruses, Microorganisms, Viruses

L8 ANSWER 3 OF 6 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 1992:495853 BIOSIS
DN PREV199243105053; BR43:105053
TI SYNTHESIS OF ANTI-HIV ACTIVE SULFATED POLYSACCHARIDES AND SULFATED ALKYL OLIGOSACCHARIDES.
AU URYU T [Reprint author]
CS INST INDUSTRIAL SCI, UNIV TOKYO, ROPPONGI, MINATO-KU, TOKYO 106, JPN
SO Abstracts of Papers American Chemical Society, (1992) Vol. 204, No. 1-2, pp. CARB 7.
Meeting Info.: 204TH AMERICAN CHEMICAL SOCIETY NATIONAL MEETING, WASHINGTON, D.C., USA, AUGUST 23-28, 1992. ABSTR PAP AM CHEM SOC.
CODEN: ACSRAL. ISSN: 0065-7727.
DT Conference; (Meeting)
FS BR
LA ENGLISH
ED Entered STN: 3 Nov 1992
Last Updated on STN: 13 Dec 1992
TI SYNTHESIS OF ANTI-HIV ACTIVE SULFATED POLYSACCHARIDES AND SULFATED ALKYL OLIGOSACCHARIDES.
IT Miscellaneous Descriptors
ABSTRACT HUMAN IMMUNODEFICIENCY VIRUS CURDLAN SULFATE LENTINAN SULFATE 1 4-ALPHA-D GALACTOSAMINE SULFATE ANTIVIRAL-DRUG SYNTHETIC

METHOD STRUCTURE-ACTIVITY RELATIONSHIP
ORGN Classifier
Retroviridae 03305
Super Taxa
DNA and RNA Reverse Transcribing Viruses; Viruses; Microorganisms
Taxa Notes
DNA and RNA Reverse Transcribing Viruses, Microorganisms, Viruses

L8 ANSWER 4 OF 6 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 1989:469644 BIOSIS
DN PREV198988105404; BA88:105404
TI ISOLATION PURIFICATION AND PARTIAL CHARACTERIZATION OF PRUNELLIN AN ANTI-HIV COMPONENT FROM AQUEOUS EXTRACTS OF PRUNELLA-VULGARIS.
AU TABBA H D [Reprint author]; CHANG R S; SMITH K M
CS DEP CHEM, UNIV CALIFORNIA, DAVIS, CALIF 95616, USA
SO Antiviral Research, (1989) Vol. 11, No. 5-6, pp. 263-274.
CODEN: ARSRDR. ISSN: 0166-3542.
DT Article
FS BA
LA ENGLISH
ED Entered STN: 17 Oct 1989
Last Updated on STN: 5 Dec 1989
AB Prunellin, an anti-HIV active compound, was isolated from aqueous extracts of the Chinese medicinal herb, Prunella vulgaris, and purified to chromatographic homogeneity. Infrared and NMR spectroscopy identified prunellin as a polysaccharide. Elemental analyses, precipitation with calcium(II), barium(II), or 9-aminoacridine suggest a sulfated polysaccharide. Paper chromatography of the exhaustively hydrolyzed material indicates the presence of glucose, galactose, xylose, gluconic acid, galactonic acid and galactosamine as the constituent monosaccharides. The molecular size of prunellin, as determined by gel permeation chromatography and the Squire method on Sephadex G-75, is about 10 kDa.
AB. . . homogeneity. Infrared and NMR spectroscopy identified prunellin as a polysaccharide. Elemental analyses, precipitation with calcium(II), barium(II), or 9-aminoacridine suggest a sulfated polysaccharide. Paper chromatography of the exhaustively hydrolyzed material indicates the presence of glucose, galactose, xylose, gluconic acid, galactonic acid and galactosamine as the constituent monosaccharides. The molecular size of prunellin, as determined by gel permeation chromatography and the Squire method on. .
.
IT Miscellaneous Descriptors
HUMAN IMMUNODEFICIENCY VIRUS SULFATED POLYSACCHARIDE CONSTITUENT MONOSACCHARIDES ANTIVIRAL AGENT MOLECULAR SIZE CHROMATOGRAPHY NMR SPECTROSCOPY
ORGN Classifier
Retroviridae 03305
Super Taxa
DNA and RNA Reverse Transcribing Viruses; Viruses; Microorganisms
Taxa Notes
DNA and RNA Reverse Transcribing Viruses, Microorganisms, Viruses
ORGN Classifier
Labiatae 26230
Super Taxa
Dicotyledones; Angiospermae; Spermatophyta; Plantae
Taxa Notes
Angiosperms, Dicots, Plants, Spermatophytes, Vascular. . .

L8 ANSWER 5 OF 6 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights

reserved on STN
AN 82253529 EMBASE
DN 1982253529
TI [The influence of hexosamine derivatives on mesenchymal metabolism in fetal bone explants studied in vitro].
UBER DEN EINFLUSS VON HEXOSAMINDERIVATEN AUF MESENCHYMALE STOFFWECHSELPROZESSE IN VITRO GEZUCHTETER FETALER KNOCHENANLAGEN.
AU Karzel K.; Lee K.J.
CS Inst. Pharmakol. Toxikol., Univ. Bonn, 5300 Bonn 1, Germany
SO Zeitschrift fur Rheumatologie, (1982) Vol. 41, No. 5, pp. 212-218. .
CODEN: ZRHMBQ
CY Germany
DT Journal
FS 037 Drug Literature Index
031 Arthritis and Rheumatism
LA German
SL English
ED Entered STN: 9 Dec 1991
Last Updated on STN: 9 Dec 1991
AB The effects of hexosamine derivatives, glucuronic acid, chondroitin sulfate, and oxyphenbutazone on growth and glycosaminoglycan metabolism of murine fetal bone explants cultured for 6 days in vitro were studied. Glucosamine hydrochloride, glucosamine hydroiodide and glucosamine sulfate (at concentrations of 100 μg/ml) caused a significant increase in the growth of the explants; this effect was not due to an increase in cell multiplication, as can be concluded from the DNA content of the explants, but rather to an increase in the glycosaminoglycans in the extracellular cartilage matrix. In addition, the three glucosamine salts induced an increase in the secretion of glycosaminoglycans from the surface of the explants into the culture medium. N-acetylgalactosamine, sodium glucuronide and chondroitin sulfate showed lesser or nonsignificant effects as compared to the glucosamine derivatives or the controls. Galactosamine hydrochloride (100 μg/ml) exerted inhibitory actions on the bone explants. Oxyphenbutazone (10 μg/ml), also, led to a significant inhibition of the growth and glycosaminoglycan metabolism of the explants without influencing (at this concentration) their DNA content. From the results obtained it is concluded that in the treatment of degenerative joint diseases nonsteroidal antiphlogistics acting similarly to oxyphenbutazone should be used, if at all, as cautiously as possible, whereas drugs with the type of action observed in the three glucosamine derivatives could be expected to exert a beneficial effect.
AB . . . and oxyphenbutazone on growth and glycosaminoglycan metabolism of murine fetal bone explants cultured for 6 days in vitro were studied. Glucosamine hydrochloride, glucosamine hydroiodide and glucosamine sulfate (at concentrations of 100 μg/ml) caused a significant increase in the growth of the explants; this effect was not due. . . N-acetylgalactosamine, sodium glucuronide and chondroitin sulfate showed lesser or nonsignificant effects as compared to the glucosamine derivatives or the controls. Galactosamine hydrochloride (100 μg/ml) exerted inhibitory actions on the bone explants. Oxyphenbutazone (10 μg/ml), also, led to a significant inhibition of. . .
CT Medical Descriptors:
*bone
*dna synthesis
*fetus bone
*hexosamine derivative
*mesenchyme
*metabolism
fetus
mouse
tissue culture
in vitro study

animal experiment
*chondroitin sulfate
*galactosamine
*glucosamine
*glucuronic acid
*glycosaminoglycan
*n acetylgalactosamine
*oxyphenbutazone

RN (chondroitin sulfate) 9007-28-7, 9082-07-9; (galactosamine) 7535-00-4; (glucosamine) 3416-24-8, 4607-22-1; (glucuronic acid) 36116-79-7, 576-37-4, 6556-12-3; (oxyphenbutazone) 129-20-4

L8 ANSWER 6 OF 6 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN DUPLICATE 1

AN 81200905 EMBASE

DN 1981200905

TI Chemical analysis of glycosaminoglycans inhibiting DNA synthesis.

AU Aoi Y.; Yokota M.; Kato I.; Hosokawa T.

CS Inst. Med. Sci., Univ. Tokyo, Takanawa, Tokyo 108, Japan

SO Journal of Medicine, (1981) Vol. 12, No. 2-3, pp. 127-146. .
CODEN: JNMDBO

CY United States

DT Journal

FS 029 Clinical Biochemistry
016 Cancer
037 Drug Literature Index
022 Human Genetics

LA English

ED Entered STN: 9 Dec 1991
Last Updated on STN: 9 Dec 1991

AB Sulfated glycosaminoglycans having inhibitory activity in cellular and subcellular systems were found in some tumor tissues from humans. These glycosaminoglycans inhibited more efficiently DNA synthesis of virus transformed cells (SV40-WIRL-3 cells) than their parent normal cells (WIRL-3 cells). Sulfated glycosaminoglycans found in normal human and non-tumor tissues did not have as high an inhibitory activity on DNA synthesis by cells used in this investigation as those from some human tumor tissues. The former did not inhibit as effectively DNA synthesis by virus transformed cells, as DNA synthesis by their normal parent cells. The monosaccharide composition of these sulfated glycosaminoglycans showed N-acetyl glucosamine (Glu-NAc) as a main monosaccharide, and xylose (Xyl), glucose (Glu), galactose (Gal), hyaluronic acid (Hu-A) as minor monosaccharides. N-acetyl galactosamine was not detected.

TI Chemical analysis of glycosaminoglycans inhibiting DNA synthesis.

AB . . . inhibitory activity in cellular and subcellular systems were found in some tumor tissues from humans. These glycosaminoglycans inhibited more efficiently DNA synthesis of virus transformed cells (SV40-WIRL-3 cells) than their parent normal cells (WIRL-3 cells). Sulfated glycosaminoglycans found in normal human and non-tumor tissues did not have as high an inhibitory activity on DNA synthesis by cells used in this investigation as those from some human tumor tissues. The former did not inhibit as effectively DNA synthesis by virus transformed cells, as DNA synthesis by their normal parent cells. The monosaccharide composition of these sulfated glycosaminoglycans showed N-acetyl glucosamine (Glu-NAc) as a main monosaccharide, and xylose (Xyl), glucose (Glu), galactose (Gal), hyaluronic acid (Hu-A) as minor monosaccharides. N-acetyl galactosamine was not detected.

CT Medical Descriptors:

*cancer cell culture
*dna synthesis
*drug analysis
cell transformation
thymidine h 3
tumor
virus infection
in vitro study
human cell
*glycosaminoglycan
*n acetylglucosamine
galactose
glucose
hyaluronic acid
xylose
radioisotope

SN 10/661,428

```
 Peters L?/au
L1        2684 PETERS L?/AU

=> s l1 and thermostable polymerase1
1 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s l1 and thermostable polymerase#
L2            2 L1 AND THERMOSTABLE POLYMERASE#

=> d l2 1-2 bib ab kwic

L2   ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2003:376294  CAPLUS
DN   138:384225
TI   Polynucleotide synthesis method and compositions for reversible inhibition
     of thermostable polymerases
IN   Peters, Lars-Erik
PA   Eppendorf AG, Germany
SO   U.S. Pat. Appl. Publ., 24 pp.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     ---------------     ----   --------    --------------------    --------
PI   US 2003092135        A1    20030515    US 2001-993064          20011113
     US 6667165           B2    20031223
     US 2004077008        A1    20040422    US 2003-661428          20030911
PRAI US 2001-993064       A1    20011113
AB   Methods for improving sensitivity and specificity of polynucleotide
     synthesis are disclosed.  The method includes reversibly blocking
     thermophilic polymerase activity with non-nucleic acid polyanions in a
     temperature dependent manner.  The methods control target specific primer
     extension throughout all stages of a DNA or RNA amplification reaction.
     Corresponding compns. and kits are disclosed.
TI   Polynucleotide synthesis method and compositions for reversible inhibition
     of thermostable polymerases
IN   Peters, Lars-Erik
IT   Primers (nucleic acid)
     RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);
     ANST (Analytical study); BIOL (Biological study); USES (Uses)
        (DNA; polynucleotide synthesis method and compns. for reversible
        inhibition of thermostable polymerases)
IT   Polymers, biological studies
     RL: BSU (Biological study, unclassified); BUU (Biological use,
     unclassified); BIOL (Biological study); USES (Uses)
        (co-, sugar; polynucleotide synthesis method and compns. for reversible
        inhibition of thermostable polymerases)
IT   Molecular association
        (dissociation, polyanion dissociation from polymerase; polynucleotide
synthesis
        method and compns. for reversible inhibition of thermostable
        polymerases)
IT   Temperature
        (polymerization, at which polyanion inhibits thermostable
        polymerase; polynucleotide synthesis method and compns. for
        reversible inhibition of thermostable polymerases)
IT   Archaea
     Heating
     Human immunodeficiency virus 1
     Meiothermus ruber
```

PCR (polymerase chain reaction)
Polymerization
Pyrococcus
Pyrococcus furiosus
Pyrococcus woesei
Sulfolobus
Thermococcus litoralis
Thermophilic bacteria
Thermoplasma acidophilum
Thermotoga maritima
Thermus aquaticus
Thermus brockianus
Thermus flavus
Thermus thermophilus
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Deoxyribonucleoside triphosphates
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Enzyme inhibitors
Sulfonic acids, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Test kits
(polynucleotide synthesis; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases
)

IT Sulfates, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polysulfates, synthetic organic; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Anions
(polyvalent; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT DNA
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(primer; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Avian myeloblastosis virus
Human immunodeficiency virus 2
Murine leukemia virus
Rous sarcoma virus
(reverse transcriptase; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Polymers, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(sugar; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Oligosaccharides, biological studies
Polysaccharides, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(sulfated; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Polynucleotides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(synthesis; polynucleotide synthesis method and compns. for reversible

inhibition of thermostable polymerases)
IT Nucleic acids
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(template; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)
IT Eubacteria
(thermophilic; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)
IT 57-50-1, Sugar, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polymer or copolymer; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)
IT 9012-90-2, DNA polymerase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)
IT 50-99-7, Glucose, biological studies 685-73-4, D-Galacturonic acid 1811-31-0, N-Acetyl Galactosamine 2438-80-4D, Fucose, sulfated 7512-17-6, N-Acetyl-glucosamine 9003-53-6D, Polystyrene, sulfate 9004-61-9, Hyaluronic acid 9005-49-6, Heparin, biological studies 9007-28-7, Chondroitin polysulfate 9014-24-8, RNA polymerase 9042-14-2, Dextran sulfate 9050-30-0, Heparan sulfate 9056-36-4, Keratan polysulfate 9068-38-6, Reverse transcriptase 9072-19-9, Fucoidan 25191-25-7, Polyvinyl sulfate 37300-21-3, Pentosan polysulfate
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

L2 ANSWER 2 OF 2 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 2004:107300 BIOSIS
DN PREV200400111087
TI Method and compositions for reversible inhibition of thermostable polymerases.
AU Peters, Lars-Erik [Inventor, Reprint Author]
CS Lafayette, CO, USA
ASSIGNEE: Eppendorf AG, Germany
PI US 6667165 20031223
SO Official Gazette of the United States Patent and Trademark Office Patents, (Dec 23 2003) Vol. 1277, No. 4. http://www.uspto.gov/web/menu/patdata.html . e-file.
ISSN: 0098-1133 (ISSN print).
DT Patent
LA English
ED Entered STN: 25 Feb 2004
Last Updated on STN: 25 Feb 2004
AB Methods for improving sensitivity and specificity of polynucleotide synthesis are disclosed. The method includes reversibly blocking thermophilic polymerase activity with non-nucleic acid polyanions in a temperature dependent manner. The methods control target specific primer extension throughout all stages of a DNA or RNA amplification reaction. Corresponding compositions and kits are disclosed.
TI Method and compositions for reversible inhibition of thermostable polymerases.
AU Peters, Lars-Erik [Inventor, Reprint Author]
IT Major Concepts
Methods and Techniques; Molecular Genetics (Biochemistry and Molecular Biophysics)
IT Chemicals & Biochemicals
thermostable polymerase reversible inhibition compositions: enzyme inhibitor-drug; thermostable polymerases

```
=> s polymerase and (polyanion or sulfate or glucose or glucosamine)
L3       21692 POLYMERASE AND (POLYANION OR SULFATE OR GLUCOSE OR GLUCOSAMINE)

=> s l3 and thermostable
L4         101 L3 AND THERMOSTABLE

=> s l4 and revers####
L5          14 L4 AND REVERS####

=> dup rem l5
PROCESSING COMPLETED FOR L5
L6           12 DUP REM L5 (2 DUPLICATES REMOVED)

=> d l6 1-12 bib ab kwic

L6   ANSWER 1 OF 12  CAPLUS  COPYRIGHT 2006 ACS on STN DUPLICATE 1
AN   2005:156228  CAPLUS
       Correction of: 2005:16967
DN   142:192331
       Correction of: 142:108390
TI   Quantitative RT-PCR method for the detection in blood of
     microarray-identified rheumatoid arthritis-related gene transcripts for
     diagnosing and monitoring disease state
IN   Liew, Choong-Chin
PA   Chondrogene Limited, Can.
SO   U.S. Pat. Appl. Publ., 81 pp., Cont.-in-part of U.S. Ser. No. 802,875.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 31
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
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PI   US 2005003394        A1    20050106    US 2004-812782          20040330
     US 2004014059        A1    20040122    US 2002-268730          20021009
     US 2006134635        A1    20060622    US 2004-802875          20040312
     US 2005191637        A1    20050901    US 2004-803737          20040318
     US 2005196762        A1    20050908    US 2004-803759          20040318
     US 2005196763        A1    20050908    US 2004-803857          20040318
     US 2005196764        A1    20050908    US 2004-803858          20040318
     US 2005208505        A1    20050922    US 2004-803648          20040318
PRAI US 1999-115125P      P     19990106
     US 2000-477148       B1    20000104
     US 2002-268730       A2    20021009
     US 2003-601518       A2    20030620
     US 2004-802875       A2    20040312
     US 2001-271955P      P     20010228
     US 2001-275017P      P     20010312
     US 2001-305340P      P     20010713
     US 2002-85783        A2    20020228
AB   The present invention is directed to detection and measurement of gene
     transcripts and their equivalent nucleic acid products in blood for diagnosing
     and monitoring diseases.  The present invention demonstrates that a simple
     drop of blood may be used to determine the quant. expression of various mRNAs
     that reflect the health/disease state of the subject through the use of
     quant. reverse transcription-polymerase chain reaction
     (QRT-PCR) anal.  Specifically provided is anal. performed on a drop of
     blood for detecting, diagnosing and monitoring rheumatoid arthritis using
     gene-specific and/or tissue-specific primers.  The present invention also
     describes methods by which delineation of the sequence and/or quantitation
     of the expression levels of disease-specific genes allows for an immediate
     and accurate diagnostic/prognostic test for disease or to assess the
     effect of a particular treatment regimen.
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AB The present invention is directed to detection and measurement of gene transcripts and their equivalent nucleic acid products in blood for diagnosing and monitoring diseases. The present invention demonstrates that a simple drop of blood may be used to determine the quant. expression of various mRNAs that reflect the health/disease state of the subject through the use of quant. reverse transcription-polymerase chain reaction (QRT-PCR) anal. Specifically provided is anal. performed on a drop of blood for detecting, diagnosing and monitoring rheumatoid arthritis using gene-specific and/or tissue-specific primers. The present invention also describes methods by which delineation of the sequence and/or quantitation of the expression levels of disease-specific genes allows for an immediate and accurate diagnostic/prognostic test for disease or to assess the effect of a particular treatment regimen.

IT PCR (polymerase chain reaction)
(RT-PCR (reverse transcription-PCR), QRT-PCR; quant. RT-PCR method for detection in blood of microarray-identified rheumatoid arthritis-related gene transcripts for diagnosing and monitoring disease state)

IT PCR (polymerase chain reaction)
(real-time; quant. RT-PCR method for detection in blood of microarray-identified rheumatoid arthritis-related gene transcripts for diagnosing and monitoring disease state)

IT 152989-72-5 191878-71-4 191879-40-0 203266-98-2, Protein gp25L2 (human clone c15181) 208670-29-5 216151-15-4, KIAA0740 protein (human gene KIAA0740) 216153-58-1, Protein KIAA0781 (human gene KIAA0781) 216438-93-6 222963-19-1 222963-36-2 226888-50-2 226894-14-0 229473-94-3, Protein (mouse gene Ankhzn) 236112-43-9 253423-55-1 253423-83-5 253424-01-0 253655-57-1 253655-58-2 253656-34-7 267641-37-2, Antigen A36 (human testis) 272761-43-0 272761-50-9 272761-96-3 272761-99-6 272762-44-4 288602-02-8 295808-27-4 324082-46-4 324082-62-4 353526-79-1 353526-89-3 353527-42-1 358405-47-7 358405-50-2 358405-61-5 358405-79-5 358406-10-7 383930-00-5 383930-14-1 383930-61-8 385849-22-9, Protein (human KG-1 cell gene KIAA0062) 385856-68-8 385856-69-9 420279-99-8 420280-00-8 420280-01-9 421044-27-1 430529-31-0, Protein (human clone B764 gene BNIP3h) 437660-76-9 437660-92-9 444955-72-0 459537-97-4, Protein (human KG-1 cell gene KIAA0066) 459586-24-4 459598-18-6 459618-22-5, Protein (human 515-amino acid) 459629-43-7 459636-00-1 459672-44-7 459720-03-7, BM-017 (human) 459751-48-5 459752-53-5 461486-71-5 462312-30-7, Homeodomain protein (human gene OG12) 462379-84-6 462389-28-2, Keratan sulfate proteoglycan (human) 479329-25-4, Zinc finger protein (human gene ZNF141) 479576-16-4 479799-15-0 479864-77-2 479871-62-0 479872-38-3, Tho2 (human) 479888-06-7 479890-04-5 479903-07-6 479929-02-7, PP784 (human) 479952-50-6 479980-27-3 479980-28-4 480078-72-6 480086-74-6 480095-59-8 480096-37-5 480112-72-9, Septin 2 (human gene SEP2) 480121-99-1, Ras-related GTP-binding protein (human) 480136-72-9 480155-05-3, Protein OKL38 (human gene OKL38) 480554-44-7, Cofilin isoform 1 (human) 480554-71-0 480579-67-7 480579-90-6 480603-71-2 480648-72-4 480650-48-4, Fibronectin (human clone TCH1, TCH2) 480660-52-4 480678-22-6 480684-08-0 480707-76-4 480725-75-5 480728-57-2 480772-05-2, CHP protein (human clone IMAGE:3996377) 480777-96-6 480788-52-1 480795-18-4 480911-30-6, E3B1 (human) 480937-17-5, Bone sialoprotein (human gene BNSP) 480946-18-7, FUSE binding protein 3 (human gene FBP3) 480962-02-5 480969-40-2 480971-01-5 480981-35-9 481119-74-8 481129-69-5, GILZ (human gene GILZ) 481134-96-7 481141-08-6 481141-14-4 481143-08-2 481143-09-3 481210-80-4 481211-56-7 481213-66-5 481234-87-1 481234-88-2 481243-77-0, Ras inhibitor (human cell line U118-MG) 481247-72-7 481247-84-1 481247-93-2 481248-16-2 481262-21-9 481267-95-2 481268-33-1 481270-69-3 481273-32-9 481274-39-9 481299-01-8 481306-70-1, Protein (human 402-amino acid) 481327-67-7 481499-85-8, Spectrin, β- (Canis familiaris) 483232-06-0 483489-38-9, GAPIII (mouse strain C57BL) 484257-79-6 484998-73-4, PAK2

(human) 484999-05-5, CLK4 (human) 484999-83-9, FKSG64 (human gene FKSG64) 485001-02-3, Protein (human gene pp11741) 485001-61-4, Protein (human gene pp9974) 487411-89-2 487411-90-5 487411-91-6 487411-92-7 487411-93-8 487411-94-9 487649-87-6, Protein (mouse 338-amino acid) 487653-57-6 622561-65-3 622678-98-2 622686-01-5, Protein (human gene hAWMS1) 622894-57-9 622894-67-1 623022-15-1 624590-66-5 624590-92-7 624590-94-9 625165-21-1, Titin (human clone #14104 gene TTN) 625165-22-2 625165-23-3 665432-05-3 665433-63-6 787282-35-3 806855-12-9 806856-15-5 806856-74-6 820183-14-0 820183-15-1
RL: ANT (Analyte); BSU (Biological study, unclassified); DGN (Diagnostic use); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(amino acid sequence; quant. RT-PCR method for detection in blood of microarray-identified rheumatoid arthritis-related gene transcripts for diagnosing and monitoring disease state)

IT 9068-38-6, Reverse transcriptase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(quant. RT-PCR method for detection in blood of microarray-identified rheumatoid arthritis-related gene transcripts for diagnosing and monitoring disease state)

IT 9012-90-2, DNA polymerase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(thermostable; quant. RT-PCR method for detection in blood of microarray-identified rheumatoid arthritis-related gene transcripts for diagnosing and monitoring disease state)

L6 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:497351 CAPLUS
DN 143:40590
TI Nucleic acid-chelating agent conjugates for detecting recombinant protein
IN Astatke, Mekbib
PA USA
SO U.S. Pat. Appl. Publ., 19 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2005123932	A1	20050609	US 2003-729898	20031209
PRAI US 2003-729898		20031209		

AB A nucleotide having covalently bonded thereto a chelating agent can be used by a nucleic acid polymerase to synthesize a nucleic acid-chelating agent conjugate. The nucleic acid-chelating agent conjugate can chelate a transition metal ion and be used to detect a polyhistidine-containing recombinant protein. DCTP-CM-Lys was incorporated into a nucleic acid by fill-in reaction of annealed 32P-labeled oligonucleotides of unequal length. The incorporated chelating agent was charged with Ni2+ and the chelate was used to detect electrophoretically-separated His-tagged protein bands on a nitrocellulose membrane.
AB A nucleotide having covalently bonded thereto a chelating agent can be used by a nucleic acid polymerase to synthesize a nucleic acid-chelating agent conjugate. The nucleic acid-chelating agent conjugate can chelate a transition metal ion and be used to detect a polyhistidine-containing recombinant protein. DCTP-CM-Lys was incorporated into a nucleic acid by fill-in reaction of annealed 32P-labeled oligonucleotides of unequal length. The incorporated chelating agent was charged with Ni2+ and the chelate was used to detect electrophoretically-separated His-tagged protein bands on a nitrocellulose membrane.

IT Escherichia coli
(DNA polymerase I from, for synthesizing nucleic

acid-chelating agent conjugates; nucleic acid-chelating agent conjugates for detecting recombinant protein)

IT Microorganism
(mesophilic, DNA polymerase from, for synthesizing nucleic acid-chelating agent conjugates; nucleic acid-chelating agent conjugates for detecting recombinant protein)

IT Affinity
Gel electrophoresis
Microtiter plates
Nucleic acid amplification (method)
PCR (polymerase chain reaction)
(nucleic acid-chelating agent conjugates for detecting recombinant protein)

IT PCR (polymerase chain reaction)
(real-time; nucleic acid-chelating agent conjugates for detecting recombinant protein)

IT Heat
(thermostable PCR polymerase for synthesizing nucleic acid-chelating agent conjugates; nucleic acid-chelating agent conjugates for detecting recombinant protein)

IT 9012-90-2, DNA polymerase
RL: BSU (Biological study, unclassified); CAT (Catalyst use); BIOL (Biological study); USES (Uses)
(Taq, Tne, Tma, Tth, Pfu, pfx, VENT and DeepVent, in synthesizing nucleic acid-chelating agent conjugates; nucleic acid-chelating agent conjugates for detecting recombinant protein)

IT 9014-24-8, RNA polymerase 9068-38-6, Reverse transcriptase
RL: BSU (Biological study, unclassified); CAT (Catalyst use); BIOL (Biological study); USES (Uses)
(in synthesizing nucleic acid-chelating agent conjugates; nucleic acid-chelating agent conjugates for detecting recombinant protein)

IT 56-65-5D, ATP, conjugates with chelating agent 63-39-8D, UTP, conjugates with chelating agent 65-47-4D, CTP, conjugates with chelating agent 86-01-1D, GTP, conjugates with chelating agent 365-08-2D, DTTP, conjugates with chelating agent 1927-31-7D, DATP, conjugates with chelating agent 2056-98-6, DCTP 2056-98-6D, DCTP, conjugates with chelating agent 2564-35-4D, DGTP, conjugates with chelating agent 7786-81-4, Nickel sulfate 16595-02-1D, DITP, conjugates with chelating agent
RL: RCT (Reactant); RACT (Reactant or reagent)
(nucleic acid-chelating agent conjugates for detecting recombinant protein)

L6 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:633162 CAPLUS
DN 141:168933
TI Detecting nucleic acid amplification by monitoring hydrolysis of labeled nucleoside polyphosphates
IN Sood, Anup; Kumar, Shiv; Nelson, John; Fuller, Carl; Sekher, Anuradha
PA USA
SO U.S. Pat. Appl. Publ., 32 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004152104	A1	20040805	US 2003-651362	20030829
WO 2004072304	A1	20040826	WO 2003-US27287	20030829

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,

PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU	2003265857	A1	20040906	AU 2003-265857	20030829
EP	1590479	A1	20051102	EP 2003-815905	20030829
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP	2006513705	T2	20060427	JP 2004-568296	20030829
PRAI	US 2003-445274P	P	20030205		
	WO 2003-US27287	W	20030829		

OS MARPAT 141:168933

AB Methods of using nucleoside triphosphates that carry a label in the β- or γ-phosphate of the triphosphate or a polyphosphate derivative are described for use as substrates for nucleic acid polymerases in nucleic acid amplification. Progress of the amplification is therefore followed by release of label rather than by its incorporation into the macromol. amplification product. The labels may be chemiluminescent, fluorescent, electrochem. or chromogenic moieties or mass labels and may include those that are directly detectable, detectable after the cleavage product is processed by another enzyme or other processes to generate a different signal. Specifically, acridinone derivs. of nucleoside triphosphates are described. Reagents that can stabilize terminal-phosphate labeled nucleoside polyphosphates in aqueous solns. at the elevated temps used in nucleic acid amplification and are useful for reducing non-enzymic hydrolysis of these nucleotides, and hence decrease background are also identified. In particular, these reagents stabilized the terminal-phosphate labeled nucleoside polyphosphates in the presence of MnCl2 used to relax substrate specificity for many DNA polymerases. Synthesis of δ-9H(1,3-dichloro-9,9-dimethylacridine-2-one-7-yl)deoxythymidine-5'-tetraphosphate (dT4P-DDAO) using carbodiimide chemical is described. Analogs of dATP, dCTP and dGTP were also prepared These nucleoside triphosphate derivs. could be used as substrates by some, but not all, thermostable DNA polymerases in PCR. The acridinone phosphate released during PCR did not fluoresce, but fluorescence was seen after treatment with alkaline phosphatase. Stabilization of dT4P-DDAO against manganese-mediated hydrolysis at 37° using glycerol 5% or ammonium sulfate 10 mM is demonstrated.

AB Methods of using nucleoside triphosphates that carry a label in the β- or γ-phosphate of the triphosphate or a polyphosphate derivative are described for use as substrates for nucleic acid polymerases in nucleic acid amplification. Progress of the amplification is therefore followed by release of label rather than by its incorporation into the macromol. amplification product. The labels may be chemiluminescent, fluorescent, electrochem. or chromogenic moieties or mass labels and may include those that are directly detectable, detectable after the cleavage product is processed by another enzyme or other processes to generate a different signal. Specifically, acridinone derivs. of nucleoside triphosphates are described. Reagents that can stabilize terminal-phosphate labeled nucleoside polyphosphates in aqueous solns. at the elevated temps used in nucleic acid amplification and are useful for reducing non-enzymic hydrolysis of these nucleotides, and hence decrease background are also identified. In particular, these reagents stabilized the terminal-phosphate labeled nucleoside polyphosphates in the presence of MnCl2 used to relax substrate specificity for many DNA polymerases. Synthesis of δ-9H(1,3-dichloro-9,9-dimethylacridine-2-one-7-yl)deoxythymidine-5'-tetraphosphate (dT4P-DDAO) using carbodiimide chemical is described. Analogs of dATP, dCTP and dGTP were also prepared These nucleoside triphosphate derivs. could be used as substrates by some, but not all, thermostable DNA polymerases in PCR. The acridinone phosphate released during PCR did not fluoresce, but fluorescence was seen after treatment with alkaline phosphatase. Stabilization of dT4P-DDAO against

manganese-mediated hydrolysis at 37° using glycerol 5% or ammonium sulfate 10 mM is demonstrated.

IT NASBA (nucleic acid sequence-based amplification)
Nucleic acid amplification (method)
PCR (polymerase chain reaction)
Test kits
(detecting nucleic acid amplification by monitoring hydrolysis of labeled nucleoside polyphosphates)

IT Bacillus phage ϕ29
Pyrococcus furiosus
Thermococcus barossii
Thermococcus kodakaraensis
Thermococcus litoralis
(nucleoside polyphosphate substrates for DNA polymerase of; detecting nucleic acid amplification by monitoring hydrolysis of labeled nucleoside polyphosphates)

IT 9012-90-2, DNA polymerase 9014-24-8, RNA polymerase 9027-67-2, Terminal deoxynucleotidyltransferase 9068-38-6, Reverse transcriptase 64885-96-7, Primase 120178-12-3, Telomerase
RL: CAT (Catalyst use); USES (Uses)
(nucleoside polyphosphate substrates for; detecting nucleic acid amplification by monitoring hydrolysis of labeled nucleoside polyphosphates)

IT 56-81-5, Glycerol, uses 4408-78-0 7631-95-0, Sodium molybdate 7783-20-2, Ammonium sulfate, uses 13472-45-2, Sodium tungstate 13718-26-8, Sodium vanadate
RL: MOA (Modifier or additive use); USES (Uses)
(stabilization of nucleoside polyphosphate substrates in presence of manganese by; detecting nucleic acid amplification by monitoring hydrolysis of labeled nucleoside polyphosphates)

L6 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:376294 CAPLUS
DN 138:384225
TI Polynucleotide synthesis method and compositions for reversible inhibition of thermostable polymerases
IN Peters, Lars-Erik
PA Eppendorf AG, Germany
SO U.S. Pat. Appl. Publ., 24 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003092135	A1	20030515	US 2001-993064	20011113
	US 6667165	B2	20031223		
	US 2004077008	A1	20040422	US 2003-661428	20030911
PRAI	US 2001-993064	A1	20011113		

AB Methods for improving sensitivity and specificity of polynucleotide synthesis are disclosed. The method includes reversibly blocking thermophilic polymerase activity with non-nucleic acid polyanions in a temperature dependent manner. The methods control target specific primer extension throughout all stages of a DNA or RNA amplification reaction. Corresponding compns. and kits are disclosed.

TI Polynucleotide synthesis method and compositions for reversible inhibition of thermostable polymerases
AB Methods for improving sensitivity and specificity of polynucleotide synthesis are disclosed. The method includes reversibly blocking thermophilic polymerase activity with non-nucleic acid polyanions in a temperature dependent manner. The methods control target specific primer extension throughout all stages of a DNA or RNA amplification reaction. Corresponding compns. and kits are disclosed.

ST polynucleotide synthesis kit PCR thermophilic polymerase inhibitor polyanion

IT Primers (nucleic acid)
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(DNA; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Polymers, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(co-, sugar; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Molecular association
(dissociation, polyanion dissociation from polymerase; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Temperature
(polymerization, at which polyanion inhibits thermostable polymerase; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Archaea
Heating
Human immunodeficiency virus 1
Meiothermus ruber
PCR (polymerase chain reaction)
Polymerization
Pyrococcus
Pyrococcus furiosus
Pyrococcus woesei
Sulfolobus
Thermococcus litoralis
Thermophilic bacteria
Thermoplasma acidophilum
Thermotoga maritima
Thermus aquaticus
Thermus brockianus
Thermus flavus
Thermus thermophilus
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Deoxyribonucleoside triphosphates
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Enzyme inhibitors
Sulfonic acids, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Test kits
(polynucleotide synthesis; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Sulfates, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polysulfates, synthetic organic; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Anions
(polyvalent; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT DNA

RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(primer; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Avian myeloblastosis virus
Human immunodeficiency virus 2
Murine leukemia virus
Rous sarcoma virus
(reverse transcriptase; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Polymers, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(sugar; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Oligosaccharides, biological studies
Polysaccharides, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(sulfated; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Polynucleotides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(synthesis; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Nucleic acids
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(template; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT Eubacteria
(thermophilic; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT 57-50-1, Sugar, biological studies
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polymer or copolymer; polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT 9012-90-2, DNA polymerase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

IT 50-99-7, Glucose, biological studies 685-73-4, D-Galacturonic acid 1811-31-0, N-Acetyl Galactosamine 2438-80-4D, Fucose, sulfated 7512-17-6, N-Acetyl-glucosamine 9003-53-6D, Polystyrene, sulfate 9004-61-9, Hyaluronic acid 9005-49-6, Heparin, biological studies 9007-28-7, Chondroitin polysulfate 9014-24-8, RNA polymerase 9042-14-2, Dextran sulfate 9050-30-0, Heparan sulfate 9056-36-4, Keratan polysulfate 9068-38-6, Reverse transcriptase 9072-19-9, Fucoidan 25191-25-7, Polyvinyl sulfate 37300-21-3, Pentosan polysulfate
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(polynucleotide synthesis method and compns. for reversible inhibition of thermostable polymerases)

L6 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:459611 CAPLUS
DN 139:128617
TI Electrochemical DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase
AU Ikebukuro, Kazunori; Saito, Yoko; Igarashi, Satoshi; Sode, Koji
CS Department of Biotechnology, Tokyo University of Agriculture and

Technology, Koganei-shi, Tokyo, 184-8588, Japan
SO Electrochemistry (Tokyo, Japan) (2003), 71(6), 490-495
CODEN: EECTFA; ISSN: 1344-3542
PB Electrochemical Society of Japan
DT Journal
LA English
AB Genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase (S415CGDH) was used for labeling probe DNA and amperometric DNA sensor was constructed and utilized for the detection of PCR amplified Salmonella virulence invA gene. The invA gene from Salmonella which accounts for many cases of food poisoning was targeted and the DNA bearing a specific sequence complementary to the invA gene was immobilized onto an Au electrode as a capture DNA. S415CGDH labeled probe DNA was hybridized with the immobilized DNA at 60°C for 10 min and then the resulting elec. current generated from S415CGDH by glucose addition was measured. The elec. current was obtained when S415CGDH was used for labeling probe DNA but not when the native enzyme was used. The sensor response increased with the addition of glucose and 4.0 x 10-9 M of the S415CGDH labeled target DNA was detected in the presence of 29 mM glucose. The detection of PCR product was also investigated and it was successfully detected using asym. PCR product with sandwich method.
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
TI Electrochemical DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase
AB Genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase (S415CGDH) was used for labeling probe DNA and amperometric DNA sensor was constructed and utilized for the detection of PCR amplified Salmonella virulence invA gene. The invA gene from Salmonella which accounts for many cases of food poisoning was targeted and the DNA bearing a specific sequence complementary to the invA gene was immobilized onto an Au electrode as a capture DNA. S415CGDH labeled probe DNA was hybridized with the immobilized DNA at 60°C for 10 min and then the resulting elec. current generated from S415CGDH by glucose addition was measured. The elec. current was obtained when S415CGDH was used for labeling probe DNA but not when the native enzyme was used. The sensor response increased with the addition of glucose and 4.0 x 10-9 M of the S415CGDH labeled target DNA was detected in the presence of 29 mM glucose. The detection of PCR product was also investigated and it was successfully detected using asym. PCR product with sandwich method.
ST DNA bioelectrode pyrroloquinoline quinone glucose labeling hybridization; pathogenic Salmonella detection DNA hybridization bioelectrode
IT Nucleic acid hybridization
(DNA-DNA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT Virulence (microbial)
(Salmonella; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT Electrodes
(bioelectrodes, DNA-immobilized; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT Probes (nucleic acid)
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(conjugates with pyrroloquinoline quinone glucose dehydrogenase; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose

dehydrogenase)
IT PCR (polymerase chain reaction)
(detection of PCR product, amplification of sample DNA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT Amperometry
Food poisoning
Genotyping (method)
Pathogenic bacteria
Salmonella
(electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT DNA
RL: ANT (Analyte); ANST (Analytical study)
(electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT Gene, microbial
RL: ANT (Analyte); ANST (Analytical study)
(invA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT Gene, microbial
RL: ANT (Analyte); ANST (Analytical study)
(oriC, as control; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-09-8D, conjugates with pyrroloquinoline quinone glucose dehydrogenase
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(DNA probe; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-58-7
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(PCR primer forward for oriC; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-38-3
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(PCR primer forward; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-40-7
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(PCR primer reverse for oriC; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-39-4
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(PCR primer reverse; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 50-99-7, Glucose, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)

IT 566964-02-1 566964-08-7
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(nucleotide sequence electrode immobilized capture DNA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-07-6
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(nucleotide sequence electrode immobilized control DNA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-04-3
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(nucleotide sequence electrode immobilized mutant 1 DNA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-03-2
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(nucleotide sequence electrode immobilized mutant 1-1 DNA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-05-4
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(nucleotide sequence electrode immobilized mutant 3 DNA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-06-5
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(nucleotide sequence electrode immobilized mutant 6 DNA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 566964-01-0
RL: ARG (Analytical reagent use); PRP (Properties); ANST (Analytical study); USES (Uses)
(nucleotide sequence electrode immobilized target DNA; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)
IT 81669-60-5D, Pyrroloquinoline quinone glucose dehydrogenase, conjugates with probe DNA
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(recombinant thermostable S415CGDH, use in labeling probe DNA of; electrochem. DNA sensor using genetically engineered thermostable pyrroloquinoline quinone glucose dehydrogenase)

L6 ANSWER 6 OF 12 MEDLINE on STN
AN 2002633107 MEDLINE
DN PubMed ID: 12206822
TI Sulfation of bisphenol A abolished its estrogenicity based on proliferation and gene expression in human breast cancer MCF-7 cells.
AU Shimizu M; Ohta K; Matsumoto Y; Fukuoka M; Ohno Y; Ozawa S
CS Division of Pharmacology, National Institute of Health Sciences, 1-18-1 Kamiyoga, Setagaya-ku, Tokyo 158-8501, Japan.
SO Toxicology in vitro : an international journal published in association with BIBRA, (2002 Oct) Vol. 16, No. 5, pp. 549-56.
Journal code: 8712158. ISSN: 0887-2333.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)

LA English
FS Priority Journals
EM 200302
ED Entered STN: 24 Oct 2002
Last Updated on STN: 27 Feb 2003
Entered Medline: 26 Feb 2003
AB Bisphenol A, an endocrine-disrupting chemical, is widely used in many consumer products. We previously showed the sulfoconjugation of bisphenol A catalyzed by a human thermostable phenol sulfotransferase, ST1A3. The estrogenic potency of bisphenol A sulfate was compared with that of bisphenol A by an E-screen assay using human breast cancer MCF-7 cells. An increase in the expression level of an estrogen-responsive pS2 gene was also examined using MCF-7 cells after exposure to bisphenol A and its sulfate for their estrogenicity. Bisphenol A sulfate did not exhibit estrogenic effects at 0.1 microM (E-screen assay) and 1 mM (pS2 gene expression) compared with bisphenol A, which exhibited the effects at 3 nM (E-screen assay) and 1 microM (pS2 gene expression), respectively. We have therefore evaluated major roles of cytosolic phenol sulfotransferase in the human liver. Bisphenol A sulfation in human liver cytosols was inhibited by more than 90% by p-nitrophenol and quercetin, a typical substrate and specific inhibitor of phenol sulfotransferase, respectively. These results indicated that the estrogenicity of bisphenol A was abolished through its sulfation catalyzed by a human hepatic thermostable phenol sulfotransferase.
AB . . . chemical, is widely used in many consumer products. We previously showed the sulfoconjugation of bisphenol A catalyzed by a human thermostable phenol sulfotransferase, ST1A3. The estrogenic potency of bisphenol A sulfate was compared with that of bisphenol A by an E-screen assay using human breast cancer MCF-7 cells. An increase in. . . expression level of an estrogen-responsive pS2 gene was also examined using MCF-7 cells after exposure to bisphenol A and its sulfate for their estrogenicity. Bisphenol A sulfate did not exhibit estrogenic effects at 0.1 microM (E-screen assay) and 1 mM (pS2 gene expression) compared with bisphenol A,. . . respectively. These results indicated that the estrogenicity of bisphenol A was abolished through its sulfation catalyzed by a human hepatic thermostable phenol sulfotransferase.
CT . . .
*Phenols: TO, toxicity
Protein Biosynthesis
Proteins: GE, genetics
RNA, Messenger: BI, biosynthesis
RNA, Messenger: GE, genetics
Research Support, Non-U.S. Gov't
Reverse Transcriptase Polymerase Chain Reaction
Sulfates: TO, toxicity
Tumor Cells, Cultured
Tumor Suppressor Proteins

L6 ANSWER 7 OF 12 MEDLINE on STN DUPLICATE 2
AN 2001365033 MEDLINE
DN PubMed ID: 11425650
TI Thermostable (SULT1A1) and thermolabile (SULT1A3) phenol sulfotransferases in human osteosarcoma and osteoblast cells.
AU Dubin R L; Hall C M; Pileri C L; Kudlacek P E; Li X Y; Yee J A; Johnson M L; Anderson R J
CS Section of Endocrinology, Diabetes, & Metabolism, Veterans Affairs Medical Center, Omaha, NE 68105, USA.
SO Bone, (2001 Jun) Vol. 28, No. 6, pp. 617-24.
Journal code: 8504048. ISSN: 8756-3282.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Priority Journals
EM 200109
ED Entered STN: 17 Sep 2001
Last Updated on STN: 17 Sep 2001
Entered Medline: 13 Sep 2001
AB Sulfate conjugation is an important pathway in the metabolism of many drugs, xenobiotic compounds, and hormones. Sulfotransferases (SULTs) catalyze these reactions and have been detected and characterized in various human tissues including the liver and small intestine. Substrates for SULTs that include estrogen and thyroid hormones have well-established roles affecting skeletal integrity and disease processes. We performed the following studies to determine the presence of SULTs in human osteoblast-like cells, and to compare their characteristics to SULTs expressed in other human tissues. Four osteosarcoma cell lines (SaOS-2, U2-OS, PR, and HOS-TE85) were screened for the presence of four different SULT activities. Predominant activities were found for SULT1A1 in SaOS-2 cells, and SULT-1A3 in HOS-TE85 cells. Several biochemical properties of each enzyme that included apparent K(m) values, thermal stabilities, and responses to the inhibitors 2,6-dichloro-4-nitrophenol and NaCl were used to further characterize the SULT activities. High-performance liquid chromatography (HPLC) of the reaction products confirmed the known products of SULT1A1 and SULT1A3. When the mature human osteoblast HOB-03-CE6 cell line was tested for activity alone, the predominant activity was SULT1A3, with minimal SULT1A1. The results indicate that SULT1A1 and SULT1A3 are present in human osteosarcoma and mature osteoblast cell lines, and that the characteristics of the osteosarcoma cell SULTs are similar to those expressed in other human tissues. SULTs may have regulatory roles in the deactivation of thyroid hormones or estrogenic compounds in bone, and thus may affect hormone action and bone responses in the human skeleton.
TI Thermostable (SULT1A1) and thermolabile (SULT1A3) phenol sulfotransferases in human osteosarcoma and osteoblast cells.
AB Sulfate conjugation is an important pathway in the metabolism of many drugs, xenobiotic compounds, and hormones. Sulfotransferases (SULTs) catalyze these reactions. . .
CT . . . Cultured
Chromatography, High Pressure Liquid
DNA Primers
Enzyme Inhibitors: PD, pharmacology
Enzyme Stability
Humans
*Osteoblasts: EN, enzymology
*Osteosarcoma: EN, enzymology
Reverse Transcriptase Polymerase Chain Reaction
Sulfotransferases: AI, antagonists & inhibitors
*Sulfotransferases: ME, metabolism
Tumor Cells, Cultured

L6 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:842300 CAPLUS
DN 134:14734
TI Reverse transcription activity from Bacillus stearothermophilus DNA polymerase in the presence of magnesium
IN Schanke, Judith E. T.
PA Epicentre Technologies Corporation, USA
SO PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000071739	A1	20001130	WO 2000-US13960	20000519
	WO 2000071739	C2	20020704		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA 2374494	AA	20001130	CA 2000-2374494	20000519
EP 1185680	A1	20020313	EP 2000-932671	20000519
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2003500063	T2	20030107	JP 2000-620116	20000519
AU 765313	B2	20030918	AU 2000-50361	20000519
PRAI US 1999-135437P	P	19990522		
WO 2000-US13960	W	20000519		

AB The present invention is directed to a thermostable DNA polymerase from B. stearothermophilus for use in reverse transcription and/or reverse transcriptase-polymerase chain reaction (RT-PCR), where said DNA polymerase shows Mg2+-dependent reverse transcriptase activity and in the substantial absence of Mn2+. Characterization of the reverse transcriptase activity of the DNA polymerase of B. stearothermophilus type strain 5 (ATCC 12980) is described. The Mn2+ ion also increased the rate of misincorporation during reverse transcription and DNA polymerization with the enzyme.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Reverse transcription activity from Bacillus stearothermophilus DNA polymerase in the presence of magnesium

AB The present invention is directed to a thermostable DNA polymerase from B. stearothermophilus for use in reverse transcription and/or reverse transcriptase-polymerase chain reaction (RT-PCR), where said DNA polymerase shows Mg2+-dependent reverse transcriptase activity and in the substantial absence of Mn2+. Characterization of the reverse transcriptase activity of the DNA polymerase of B. stearothermophilus type strain 5 (ATCC 12980) is described. The Mn2+ ion also increased the rate of misincorporation during reverse transcription and DNA polymerization with the enzyme.

ST Bacillus thermostable reverse transcriptase DNA polymerase magnesium; RT PCR Bacillus reverse transcriptase

IT Nucleic acid amplification (method)
(3SR, reverse transcriptase for; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT PCR (polymerase chain reaction)
(RT-PCR (reverse transcription-PCR), thermostable reverse transcriptase for; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT Nucleic acid amplification (method)
(SPSR, reverse transcriptase for; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT Nucleic acid amplification (method)
(TMA, reverse transcriptase for; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT Deoxyribonucleoside triphosphates
RL: RCT (Reactant); RACT (Reactant or reagent)
(as substrates; reverse transcription activity from Bacillus

stearothermophilus DNA polymerase in presence of magnesium)

IT Primers (nucleic acid)
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(for RT-PCR; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT NASBA (nucleic acid sequence-based amplification)
(reverse transcriptase for; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT Bacillus stearothermophilus
Nucleic acid amplification (method)
(reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT Reverse transcription
(thermostable reverse transcriptase for; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT 9068-38-6, Reverse transcriptase
RL: ARU (Analytical role, unclassified); BOC (Biological occurrence); BSU (Biological study, unclassified); CAT (Catalyst use); PRP (Properties); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(DNA polymerase as; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT 16397-91-4, Manganese dication, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(as cofactor for DNA polymerase blocking reverse transcriptase; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT 142-72-3, Magnesium acetate 7487-88-9, Magnesium sulfate, biological studies 7786-30-3, Magnesium chloride, biological studies 22537-22-0, Magnesium dication, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(as cofactor for reverse transcriptase activity of DNA polymerase; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT 9012-90-2, DNA polymerase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(metal cofactors and reverse transcriptase activity of; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT 79121-99-6, 5'→3'-Exonuclease 79393-91-2, 3'→5' Exonuclease
RL: ARU (Analytical role, unclassified); BOC (Biological occurrence); BSU (Biological study, unclassified); CAT (Catalyst use); PRP (Properties); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(of DNA polymerase; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in presence of magnesium)

IT 137367-78-3 309766-48-1, 2: PN: WO0071739 SEQID: 2 unclaimed DNA 309766-49-2, 3: PN: WO0071739 SEQID: 3 unclaimed DNA 309766-50-5, 5: PN: WO0071739 SEQID: 5 unclaimed DNA 309766-51-6, 6: PN: WO0071739 SEQID: 6 unclaimed DNA 309766-52-7, 7: PN: WO0071739 SEQID: 7 unclaimed DNA 309766-53-8, 8: PN: WO0071739 SEQID: 8 unclaimed DNA 309766-54-9, 9: PN: WO0071739 SEQID: 9 unclaimed DNA
RL: PRP (Properties)
(unclaimed nucleotide sequence; reverse transcription activity from Bacillus stearothermophilus DNA polymerase in the presence of magnesium)

L6 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:806816 CAPLUS
DN 130:48291
TI method for highly sensitive nucleic acid detection with Imprint primers for single copy detection
IN Creighton, Steven; Gold, Larry
PA Nexstar Pharmaceuticals, Inc., USA
SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9855653	A1	19981210	WO 1998-US11457	19980603
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9878136	A1	19981221	AU 1998-78136	19980603
PRAI	US 1997-48886P	P	19970606		
	US 1998-27107	A	19980220		
	WO 1998-US11457	W	19980603		

AB A novel method for the highly selective detection of a specific target nucleic acid sequence in a sample composition that may contain a large number of nucleic acids. A copy of a target nucleic acid sequence is first formed by extension from a first primer complementary to part of the target sequence. A hybrid is then formed between this copy of the target nucleic acid sequence and a second primer, and the detection of the target nucleic acid sequence is based on the formation of pyrophosphate and/or dNMP. The embodiments all involve the establishment of Idling conditions using a hybrid formed between the target nucleic acid and one or more probe primer. The net result of the Idling phenomenon is the production of dNMP and PPi. Imprint primers are described that synthesize a copy, or Imprint, of the target nucleic acid that highly increase the specificity of the technique. These imprint primers are wholly or partly comprised of nuclease resistant nucleic acid residues and labeled with a group such as biotin which permits subsequent attachment to a solid support. This primer is chosen so that it hybridizes to the target nucleic acid at a position that is 3' to the location of the sequences that will later be used for Idling establishment. Trapping of Imprint and elimination of non-imprint nucleic acids is performed using avidin-coated paramagnetic beads binding to biotin. The creation of a solid phase support-bound imprint can drastically reduce the complexity of the sample. Target nucleic acid detection is indicated by PPi or NADH or ATP measured in fluormetric or electrochem. or light anal. assays. The methods have the potential to detect a single copy a target nucleic acid.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT Thermal stability
(generation of target thermostable sequence; method for highly sensitive nucleic acid detection with Imprint primers for single copy detection)

IT 60-92-4, Cyclic Amp 485-84-7, Adenosine 5'-phosphosulfate 2140-58-1, ADP-glucose 24937-83-5, Polyadenosine
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(ATP generation indicating target nucleic acid detection and production

utilizing; method for highly sensitive nucleic acid detection with Imprint primers for single copy detection)

IT 37228-74-3, Exonuclease
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(DNA polymerase with activity of; method for highly sensitive nucleic acid detection with Imprint primers for single copy detection)

IT 9068-38-6, Reverse transcriptase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MMLV and AMV; primer extension using; method for highly sensitive nucleic acid detection with Imprint primers for single copy detection)

IT 9012-90-2, Dna polymerase
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(primer extension using T4 or T7 or Pyrococcus woesei or Klenow fragment DNA polymerase; method for highly sensitive nucleic acid detection with Imprint primers for single copy detection)

IT 53-84-9, Nad 56-73-5, Glucose 6-phosphate 59-56-3
133-89-1, Uridine-5'-diphosphate-glucose 9001-40-5,
Glucose-6-phosphate dehydrogenase 9026-22-6
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(target nucleic acid detection by NADH generation utilizing enzymically-cleaved intermediates; method for highly sensitive nucleic acid detection with Imprint primers for single copy detection)

L6 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:685010 CAPLUS
DN 129:271514
TI Sulfates and acetates for relief of reverse transcriptase inhibition of reverse transcriptase-polymerase chain reaction
IN Lee, Jun E.; Rashtchian, Ayoub
PA Life Technologies, Inc., USA
SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9844161	A1	19981008	WO 1998-US6581	19980403
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9871001	A1	19981022	AU 1998-71001	19980403
	EP 975806	A1	20000202	EP 1998-917984	19980403
	EP 975806	B1	20060621		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY				
	US 6495350	B1	20021217	US 1999-472066	19991223
	US 2003113712	A1	20030619	US 2002-224334	20020821
	US 6767724	B2	20040727		
	US 2004219595	A1	20041104	US 2004-861469	20040607
PRAI	US 1997-42629P	P	19970403		
	US 1998-54485	B1	19980403		
	WO 1998-US6581	W	19980403		
	US 1999-472066	A1	19991223		

US 2002-224334 A1 20020821

AB The present invention is directed to compns. and methods useful for the amplification of nucleic acid mols. by reverse transcriptase-polymerase chain reaction (RT-PCR). Specifically, the invention provides compns. and methods for the amplification of nucleic acid mols. in a simplified one- or two-step RT-PCR procedure using combinations of reverse transcriptase and thermostable DNA polymerase enzymes in conjunction with sulfur-containing mols. or acetate-containing mols. (or combinations of such sulfur-containing mols. and acetate-containing mols.), and optionally bovine serum albumin. The presence of sulfur-containing salts, acetate-containing salts, and/or acetate-containing buffers relieves the inhibition of the RT-PCR reaction by reverse transcriptase. The invention thus facilitates the rapid and efficient amplification of nucleic acid mols. and the detection and quantitation of RNA mols. The invention also is useful in the rapid production and amplification of cDNAs which may be used for a variety of industrial, medical and forensic purposes.

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Sulfates and acetates for relief of reverse transcriptase inhibition of reverse transcriptase-polymerase chain reaction

AB The present invention is directed to compns. and methods useful for the amplification of nucleic acid mols. by reverse transcriptase-polymerase chain reaction (RT-PCR). Specifically, the invention provides compns. and methods for the amplification of nucleic acid mols. in a simplified one- or two-step RT-PCR procedure using combinations of reverse transcriptase and thermostable DNA polymerase enzymes in conjunction with sulfur-containing mols. or acetate-containing mols. (or combinations of such sulfur-containing mols. and acetate-containing mols.), and optionally bovine serum albumin. The presence of sulfur-containing salts, acetate-containing salts, and/or acetate-containing buffers relieves the inhibition of the RT-PCR reaction by reverse transcriptase. The invention thus facilitates the rapid and efficient amplification of nucleic acid mols. and the detection and quantitation of RNA mols. The invention also is useful in the rapid production and amplification of cDNAs which may be used for a variety of industrial, medical and forensic purposes.

ST reverse transcriptase PCR sulfate acetate

IT PCR (polymerase chain reaction)
(reverse transcriptase; sulfates and acetates for relief of reverse transcriptase inhibition of reverse transcriptase-PCR)

IT Albumins, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(serum, improvement of RT-PCR with; sulfates and acetates for relief of reverse transcriptase inhibition of reverse transcriptase-PCR)

IT 9068-38-6, Reverse transcriptase
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(Moloney murine leukemia virus; sulfates and acetates for relief of reverse transcriptase inhibition of reverse transcriptase-PCR)

IT 7440-09-7, Potassium, biological studies 7447-40-7, Potassium chloride, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(improvement of RT-PCR with; sulfates and acetates for relief of reverse transcriptase inhibition of reverse transcriptase-PCR)

IT 127-08-2, Potassium acetate 127-09-3, Sodium acetate 142-72-3,

Magnesium acetate 631-61-8, Ammonium acetate 638-38-0, Manganese acetate 645-65-8, 1H-Imidazole-4-acetic acid 6850-28-8, Tris-acetate 7487-88-9, Magnesium sulfate, biological studies 7783-20-2, Ammonium sulfate, biological studies 7785-87-7, Manganese sulfate 23654-78-6, Tris-sulfate 26239-55-4, ADA
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(sulfates and acetates for relief of reverse transcriptase inhibition of reverse transcriptase-PCR)

IT 9012-90-2, DNA polymerase
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(thermostable; sulfates and acetates for relief of reverse transcriptase inhibition of reverse transcriptase-PCR)

L6 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:805561 CAPLUS
DN 128:44658
TI Use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.
IN Gelfand, David H.; Myers, Thomas W.; Sigua, Christopher L.
PA Roche Molecular Systems, Inc., USA
SO U.S., 36 pp., Cont.-in-part of U.S. Ser. No. 899,241, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 27

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5693517	A	19971202	US 1995-384817	19950202
	US 4889818	A	19891226	US 1987-63509	19870617
	CA 1340921	A1	20000307	CA 1987-608796	19870717
	US 5322770	A	19940621	US 1989-455611	19891222
	JP 09224682	A2	19970902	JP 1996-246648	19901221
	CA 2087724	AA	19920125	CA 1991-2087724	19910723
	CA 2087724	C	20030916		
	US 6127155	A	20001003	US 1992-873897	19920424
	US 5352600	A	19941004	US 1992-971798	19921105
	US 5418149	A	19950523	US 1993-960362	19930105
	US 5407800	A	19950418	US 1993-80243	19930617
	US 5310652	A	19940510	US 1993-82182	19930624
	US 5455170	A	19951003	US 1993-113531	19930827
	US 5618703	A	19970408	US 1994-199509	19940222
	US 5641864	A	19970624	US 1994-311612	19940922
	US 5618711	A	19970408	US 1995-384490	19950206
	US 5561058	A	19961001	US 1995-449050	19950524
	US 5789224	A	19980804	US 1995-459383	19950602
	US 5795762	A	19980818	US 1995-458819	19950602
	US 5674738	A	19971007	US 1995-520422	19950829
PRAI	US 1987-63509	A2	19870617		
	US 1988-143441	B2	19880112		
	US 1989-455611	A2	19891222		
	US 1989-455967	B1	19891222		
	US 1990-557517	B2	19900724		
	US 1990-585471	B2	19900920		
	US 1990-609157	B2	19901102		
	US 1991-746121	B1	19910815		
	US 1992-880478	B2	19920506		
	US 1993-960362	A2	19930105		
	US 1993-82182	A2	19930624		
	US 1993-86483	B1	19930701		

US 1996-899241	B2	19960822
US 1986-899241	A2	19860822
CA 1987-542406	A3	19870717
US 1989-387003	B1	19890728
US 1989-387174	B1	19890728
US 1990-523394	A2	19900515
US 1990-590213	B2	19900928
US 1990-590466	B1	19900928
US 1990-590490	B2	19900928
JP 1991-502929	A3	19901221
WO 1991-US5210	W	19910723
US 1993-977434	A1	19930223
US 1993-113531	A3	19930827
US 1993-148133	B1	19931102
US 1994-199509	A1	19940222
US 1995-384817	B3	19950202
US 1995-384490	A3	19950206

AB Methods are provided for the replication and amplification of RNA sequences by thermostable DNA polymerases. The reverse transcription reaction is performed in a medium containing a buffer which buffers both the pH and the divalent cation concn (e.g., bicine or tricine). Said divalent cation is preferably Mn2+. In a preferred embodiment, high temperature reverse transcription is coupled to nucleic acid amplification in a one tube, one enzyme procedure using a thermostable DNA polymerase. A method for eliminating carryover contamination of amplifications due to prior reverse transcription reactions are also provided. This method comprises incorporation of an unconventional nucleotide (such as dUTP) into the cDNA and destruction of unwanted cDNA containing the unconventional nucleotide by hydrolysis (with uracil N-glycosylase, for example). Reagents and kits particularly suited for the methods of the present invention are provided. Using Thermus thermophilus DNA polymerase and MnCl2 or Mn(OAc)2 for amplifying RNA imparts an increase in sensitivity of ≥106-fold compared to standard PCR conditions (using MgCl2).

TI Use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.

AB Methods are provided for the replication and amplification of RNA sequences by thermostable DNA polymerases. The reverse transcription reaction is performed in a medium containing a buffer which buffers both the pH and the divalent cation concn (e.g., bicine or tricine). Said divalent cation is preferably Mn2+. In a preferred embodiment, high temperature reverse transcription is coupled to nucleic acid amplification in a one tube, one enzyme procedure using a thermostable DNA polymerase. A method for eliminating carryover contamination of amplifications due to prior reverse transcription reactions are also provided. This method comprises incorporation of an unconventional nucleotide (such as dUTP) into the cDNA and destruction of unwanted cDNA containing the unconventional nucleotide by hydrolysis (with uracil N-glycosylase, for example). Reagents and kits particularly suited for the methods of the present invention are provided. Using Thermus thermophilus DNA polymerase and MnCl2 or Mn(OAc)2 for amplifying RNA imparts an increase in sensitivity of ≥106-fold compared to standard PCR conditions (using MgCl2).

ST RNA amplification manganese metal buffer; Thermus thermophilus DNA polymerase RNA amplification; PCR carryover contamination dUTP uracil glycosylase; reverse transcription PCR thermostable condition

IT Thermus aquaticus
Thermus thermophilus
(DNA polymerase of; use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.)

IT PCR (polymerase chain reaction)

(RT-PCR (reverse transcription-PCR); use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.)

IT Buffers
(pH and metal cation-buffering; use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.)

IT RNA
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.)

IT 1173-82-6, DUTP 59088-21-0, Uracil N-glycosylase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(sterilization of reverse transcription reaction to prevent carryover contamination of PCR)

IT 9012-90-2, DNA polymerase
RL: CAT (Catalyst use); USES (Uses)
(thermostable; use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.)

IT 127-08-2, Potassium acetate 127-09-3, Sodium acetate 150-25-4, Bicine 546-89-4, Lithium acetate 631-61-8, Ammonium acetate 638-38-0, Manganese acetate 5704-04-1, Tricine 7439-96-5, Manganese, biological studies 7447-40-7, Potassium chloride, biological studies 7447-41-8, Lithium chloride, biological studies 7647-14-5, Sodium chloride, biological studies 7773-01-5, Manganese chloride 7785-87-7, Manganese sulfate 12125-02-9, Ammonium chloride, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.)

L6 ANSWER 12 OF 12 MEDLINE on STN
AN 97223727 MEDLINE
DN PubMed ID: 9056199
TI The use of the reverse transcription-competitive polymerase chain reaction to investigate the in vivo regulation of gene expression in small tissue samples.
AU Auboeuf D; Vidal H
CS INSERM U449, Faculte de Medecine R. Laennec, Lyon, France.
SO Analytical biochemistry, (1997 Feb 15) Vol. 245, No. 2, pp. 141-8.
Journal code: 0370535. ISSN: 0003-2697.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199705
ED Entered STN: 23 May 1997
Last Updated on STN: 3 Mar 2000
Entered Medline: 15 May 1997
AB Reverse transcription-polymerase chain reaction (RT-PCR) is widely used to detect low abundance mRNAs in small samples. Accurate quantitative measurement of their level, as required for the study of gene expression, can be performed by RT-competitive PCR, a method that relies on the addition of known amounts of a cDNA competitor molecule in the amplification reactions. Here we demonstrate that this method can be easily set up in any laboratory with a minimum of equipment in molecular biology, and that either homologous or heterologous competitor, with a small difference in sequence length relative to the target, can be

used to quantify specific mRNA accurately. We propose the utilization of a thermostable reverse transcriptase in the RT step to overcome the problem of the efficiency of target cDNA synthesis. In addition, to obtain reliable measurements, we recommend performing four PCR reactions with amounts of competitor flanking the concentration of the target mRNA.

TI The use of the reverse transcription-competitive polymerase chain reaction to investigate the in vivo regulation of gene expression in small tissue samples.

AB Reverse transcription-polymerase chain reaction (RT-PCR) is widely used to detect low abundance mRNAs in small samples. Accurate quantitative measurement of their level,. . . sequence length relative to the target, can be used to quantify specific mRNA accurately. We propose the utilization of a thermostable reverse transcriptase in the RT step to overcome the problem of the efficiency of target cDNA synthesis. In addition, to obtain. . .

CT Animals
Comparative Study
Diabetes Mellitus, Type 2: GE, genetics
Electrophoresis, Agar Gel
Evaluation Studies
*Gene Expression Regulation
Glucose Transporter Type 4
Humans
Leptin
Monosaccharide Transport Proteins: GE, genetics
*Muscle Proteins
Polymerase Chain Reaction: EC, economics
Polymerase Chain Reaction: IS, instrumentation
*Polymerase Chain Reaction: MT, methods
Proteins: GE, genetics
RNA: CH, chemistry
RNA: GE, genetics
RNA, Messenger: AN, analysis
*RNA-Directed DNA Polymerase: GE, genetics
Rats
Receptor, Insulin: GE, genetics
Reproducibility of Results
Research Support, Non-U.S. Gov't
Transcription, Genetic

CN 0 (Glucose Transporter Type 4); 0 (Leptin); 0 (Monosaccharide Transport Proteins); 0 (Muscle Proteins); 0 (Proteins); 0 (RNA, Messenger); 0 (SLC2A4 protein, human); 0 (Slc2a4 protein, rat); EC 2.7.1.112 (Receptor, Insulin); EC 2.7.7.49 (RNA-Directed DNA Polymerase)

=>

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s thermostable (10a)(DNA polymerase# or RNA polymerase# or
transcriptase#)(10a)(polyanion or dextran sulfate or sulfate or sulfated or glucose
or glucosamine or galactouronic acid or hyalouronic or galactosamine or fucose or
fucoidan or heparin or heparan or keratan or chondroitin)
L1            4 THERMOSTABLE (10A)(DNA POLYMERASE# OR RNA POLYMERASE# OR TRANSCR
                IPTASE#)(10A)(POLYANION OR DEXTRAN SULFATE OR SULFATE OR SULFATE
               D OR GLUCOSE OR GLUCOSAMINE OR GALACTOURONIC ACID OR HYALOURONIC
               OR GALACTOSAMINE OR FUCOSE OR FUCOIDAN OR HEPARIN OR HEPARAN OR
               KERATAN OR CHONDROITIN)

=> s l1 and xylan
L2            0 L1 AND XYLAN

=> s l4 and pentosan
L4 NOT FOUND
The L-number entered could not be found.  To see the definition
of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> s l1 and pentosan
L3            0 L1 AND PENTOSAN

=> dup rem l1
PROCESSING COMPLETED FOR L1
L4             4 DUP REM L1 (0 DUPLICATES REMOVED)

=> d l4 1-4 bib ab kwic

L4   ANSWER 1 OF 4  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2003:551081  CAPLUS
DN   139:113660
TI   Thermostable DNA polymerases and methods of purification same from their
     host bacterial lysates and related enzymatic assay
IN   Farchaus, Joseph W.
PA   USA
SO   U.S. Pat. Appl. Publ., 16 pp.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
     --------------      ----   --------    --------------------    --------
PI   US 2003134292        A1    20030717    US 2002-126757          20020419
     CA 2481409           AA    20031030    CA 2003-2481409         20030417
     WO 2003089606        A2    20031030    WO 2003-US12061         20030417
     WO 2003089606        A3    20040415
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,
             PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,
             TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
             FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     AU 2003225062        A1    20031103    AU 2003-225062          20030417
     EP 1497416           A2    20050119    EP 2003-721769          20030417
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
     JP 2005523016        T2    20050804    JP 2003-586319          20030417
     US 2006035360        A1    20060216    US 2005-242730          20051004
PRAI US 2001-340733P      P     20011030
     US 2002-126757       A     20020419
     WO 2003-US12061      W     20030417
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AB The present invention relates to methods and compns. for providing purified thermostable enzymes, particularly thermostable DNA polymerases, that are free of exogenous detergents. These thermostable DNA polymerases include Taq DNA polymerase, Tth DNA polymerase, Tsp sps17 DNA polymerase, Pfu DNA polymerase, Bst DNA polymerase, Tli DNA polymerase, KOD DNA polymerase, nTba DNA polymerase, Tba DNA polymerase, Taq Δ271 F667Y, Tth Δ273 F668Y, and Taq Δ271 F667Y E681 W. The present invention also provides methods for providing such purified thermostable DNA polymerases to assays in an active form by adding one or more detergents. The present invention further provides compns. and kits comprising purified thermostable DNA polymerases for use in a variety of applications, including amplification and sequencing of nucleic acids.

IT 50-99-7, D-Glucose, biological studies 58-86-6, D-Xylose, biological studies 59-23-4, D-Galactose, biological studies 63-42-3, Lactose 69-79-4, Maltose
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(alkyl glycoside hydrophilic moiety from; thermostable DNA polymerases and methods of purification same from their host bacterial lysates and related enzymic assay)

L4 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:634336 CAPLUS
DN 137:180776
TI Cloning and purification of a thermostable DNA polymerase pol I gene of Bacillus caldotenax
IN Ishino, Yoshizumi; Fujita, Kayo; Uemori, Takashi; Kato, Ikunoshin
PA Takara Shuzo Co., Ltd., Japan
SO Eur. Pat. Appl., 30 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1233061	A2	20020821	EP 2002-5743	19920527
	EP 1233061	A3	20020904		
	R: DE, FR, GB				
	JP 05176766	A2	19930720	JP 1992-73161	19920225
	JP 05284971	A2	19931102	JP 1992-112400	19920406
	EP 517418	A2	19921209	EP 1992-304763	19920527
	EP 517418	A3	19930303		
	EP 517418	B1	20031126		
	R: DE, FR, GB				
	JP 05305000	A2	19931119	JP 1992-165455	19920602
	JP 2978001	B2	19991115		
	US 5436326	A	19950725	US 1994-208036	19940309
	US 5753482	A	19980519	US 1995-428823	19950425
PRAI	JP 1991-157368	A	19910603		
	JP 1991-318685	A	19911107		
	JP 1992-72090	A	19920224		
	JP 1992-73161	A	19920225		
	JP 1992-112400	A	19920406		
	EP 1992-304763	A3	19920527		
	US 1992-887282	B1	19920522		
	US 1994-208036	A3	19940309		

AB The present invention is directed to a method for cloning a gene for Pol I type DNA polymerase of Bacillus caldotenax strain YT-G (DSM406), resistant to heat treatment at 60°C for 20 min. It involves amplifying target DNA by PCR using primers specific to the said gene and cloning the Pol I type DNA polymerase gene with a probe from amplified DNA.

IT 151-21-3, Sodium dodecyl sulfate, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(PCR hybridization buffer containing; cloning and purification of thermostable DNA polymerase pol I gene of Bacillus caldotenax)

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:53376 CAPLUS
DN 130:121419
TI Methods of preparation of nucleic acid-free thermostable enzymes such as DNA polymerases and restriction endonucleases
IN Goldstein, Adam S.; Hughes, A. John, Jr.
PA Life Technologies, Inc., USA
SO U.S., 12 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5861295	A	19990119	US 1997-778082	19970102
	US 6245533	B1	20010612	US 1999-229967	19990114
	US 2001024793	A1	20010927	US 2001-866816	20010530
	US 6531301	B2	20030311		
	US 2003109005	A1	20030612	US 2003-342237	20030115
	US 6905858	B2	20050614		
	US 2005208581	A1	20050922	US 2005-135535	20050524
PRAI	US 1997-778082	A1	19970102		
	US 1999-229967	A1	19990114		
	US 2001-866816	A1	20010530		
	US 2003-342237	A1	20030115		

AB The present invention provides thermostable enzymes, such as DNA polymerases and restriction endonucleases, that are substantially free from contamination with nucleic acids. The method of purification of the thermostable enzymes comprises permeabilizing a thermophilic bacterial cell with an aqueous solution containing a chaotropic agent and nonionic surfactant to form a spheroplast, and isolating the thermostable enzyme preparation under conditions favoring the partitioning of nucleic acid from the thermostable enzyme preparation Purification and characterization of DNA-free Taq DNA polymerase from Thermus aquaticus is described as an example. The invention also provides methods for the production of these enzymes, and kits comprising these enzymes which may be used in amplifying or sequencing nucleic acid mols., including through use of the polymerase chain reaction (PCR).
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
IT 50-01-1, Guanidine hydrochloride 7447-40-7, Potassium chloride, biological studies 7783-20-2, Ammonium sulfate, biological studies 9002-93-1, Triton X-100 9016-45-9, NP-40
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(methods of preparation of nucleic acid-free thermostable enzymes such as DNA polymerases and restriction endonucleases)

L4 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:805561 CAPLUS
DN 128:44658
TI Use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.
IN Gelfand, David H.; Myers, Thomas W.; Sigua, Christopher L.
PA Roche Molecular Systems, Inc., USA
SO U.S., 36 pp., Cont.-in-part of U.S. Ser. No. 899,241, abandoned.
CODEN: USXXAM

DT Patent
LA English
FAN.CNT 27

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5693517	A	19971202	US 1995-384817	19950202
	US 4889818	A	19891226	US 1987-63509	19870617
	CA 1340921	A1	20000307	CA 1987-608796	19870717
	US 5322770	A	19940621	US 1989-455611	19891222
	JP 09224682	A2	19970902	JP 1996-246648	19901221
	CA 2087724	AA	19920125	CA 1991-2087724	19910723
	CA 2087724	C	20030916		
	US 6127155	A	20001003	US 1992-873897	19920424
	US 5352600	A	19941004	US 1992-971798	19921105
	US 5418149	A	19950523	US 1993-960362	19930105
	US 5407800	A	19950418	US 1993-80243	19930617
	US 5310652	A	19940510	US 1993-82182	19930624
	US 5455170	A	19951003	US 1993-113531	19930827
	US 5618703	A	19970408	US 1994-199509	19940222
	US 5641864	A	19970624	US 1994-311612	19940922
	US 5618711	A	19970408	US 1995-384490	19950206
	US 5561058	A	19961001	US 1995-449050	19950524
	US 5789224	A	19980804	US 1995-459383	19950602
	US 5795762	A	19980818	US 1995-458819	19950602
	US 5674738	A	19971007	US 1995-520422	19950829
PRAI	US 1987-63509	A2	19870617		
	US 1988-143441	B2	19880112		
	US 1989-455611	A2	19891222		
	US 1989-455967	B1	19891222		
	US 1990-557517	B2	19900724		
	US 1990-585471	B2	19900920		
	US 1990-609157	B2	19901102		
	US 1991-746121	B1	19910815		
	US 1992-880478	B2	19920506		
	US 1993-960362	A2	19930105		
	US 1993-82182	A2	19930624		
	US 1993-86483	B1	19930701		
	US 1996-899241	B2	19960822		
	US 1986-899241	A2	19860822		
	CA 1987-542406	A3	19870717		
	US 1989-387003	B1	19890728		
	US 1989-387174	B1	19890728		
	US 1990-523394	A2	19900515		
	US 1990-590213	B2	19900928		
	US 1990-590466	B1	19900928		
	US 1990-590490	B2	19900928		
	JP 1991-502929	A3	19901221		
	WO 1991-US5210	W	19910723		
	US 1993-977434	A1	19930223		
	US 1993-113531	A3	19930827		
	US 1993-148133	B1	19931102		
	US 1994-199509	A1	19940222		
	US 1995-384817	B3	19950202		
	US 1995-384490	A3	19950206		

AB Methods are provided for the replication and amplification of RNA sequences by thermostable DNA polymerases. The reverse transcription reaction is performed in a medium containing a buffer which buffers both the pH and the divalent cation concn (e.g., bicine or tricine). Said divalent cation is preferably Mn2+. In a preferred embodiment, high temperature reverse transcription is coupled to nucleic acid amplification in a one tube, one enzyme procedure using a thermostable DNA polymerase. A method for eliminating carryover contamination of amplifications due to prior reverse transcription reactions are also provided. This method comprises incorporation of an unconventional nucleotide (such as dUTP) into the cDNA

and destruction of unwanted cDNA containing the unconventional nucleotide by hydrolysis (with uracil N-glycosylase, for example). Reagents and kits particularly suited for the methods of the present invention are provided. Using Thermus thermophilus DNA polymerase and MnCl2 or Mn(OAc)2 for amplifying RNA imparts an increase in sensitivity of ≥106-fold compared to standard PCR conditions (using MgCl2).

IT 127-08-2, Potassium acetate 127-09-3, Sodium acetate 150-25-4, Bicine 546-89-4, Lithium acetate 631-61-8, Ammonium acetate 638-38-0, Manganese acetate 5704-04-1, Tricine 7439-96-5, Manganese, biological studies 7447-40-7, Potassium chloride, biological studies 7447-41-8, Lithium chloride, biological studies 7647-14-5, Sodium chloride, biological studies 7773-01-5, Manganese chloride 7785-87-7, Manganese sulfate 12125-02-9, Ammonium chloride, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(use of manganese, metal ion buffer, and thermostable DNA polymerase for coupled high temperature reverse transcription and polymerase chain reaction.)

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